PHOTO-ERA

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Race Between Camera and Amateur

ARTHUR PALME

IT is now twenty years ago that the bacillus photographicus entered my system. Then, I met my uncle, who, a year previous, inherited a 5 x 7 view camera, equipped with a Goerz F/6 anastigmat, and about fifty pounds of accessories and chemicals. On one of his library-shelves were placed about three lineal feet of concentrated photographic wisdom. Amateur photography was then in its infancy; and since my uncle lived in a small town, there was no one near to explain anything pertaining to this mysterious art. That's where the three lineal feet of books proved of value.

When I met him—a year after his inheritance—he produced already very laudable and technically almost perfect pictures. The first few weeks after he got his camera, he spent two hours, every evening, reading in his various books descriptions of different makes of photographic apparatus, comparing these with his outfit, and making himself generally conversant with every matter photographic. After being thus mentally equipped, he ordered from the nearest large city some plates and papers. Having filled some of his plateholders, he went out on the first fine day with his camera, a weighty tripod and one of the books and strolled in the picturesque neighborhood until his eyes beheld a spot in nature worth recording. He set up his tripod, unpacked and assembled his camera, and began to inspect the view on the ground-glass. No, he did not "compose," I am sure, as in those days that word did not bother any photographer. He simply used common sense,—avoided an obtrusive telegraph-pole or the side of a barn in an otherwise perfect landscape. Whether the view was "in balance," or whether the eye of the beholder "had a natural entrance and exit to and from his picture," was absolutely unknown and immaterial to him. He tried to get a copy of a pleasing piece of nature, as true to the original as monochromatic and technical reproduction would permit. Finally, the chosen standpoint was all-around satisfactory. Subsequent trials with different lens-openings proved how much definition of the foreground gave the most pleasing effect to the eye.

He had read with much interest all the above-mentioned manipulation, over and over again; but to go through all these himself, proved fascinating, if not thrilling. Then he sat down, pulled out his book once more, had one good look at his surroundings, and began to calculate. Now came the most important thing of all—the right exposure. There were, of course, no exposure-meters or tables available in those pioneer-days of amateur photography. "F/16 and two to ten seconds ought to make it" he finally decided, and for the first time in his life he exposed a plate. He gave two seconds the first plate, inserted another one and gave it six seconds and a third one ten seconds, labeling each one accordingly. That, he called a day's work; and hurried home to his "darkroom" with great expectations.

There were some old scales among his inherited paraphernalia, and presently the compounding of the developer and fixing-bath was taken up. From his books, he chose formulæ containing such chemicals as he found among the many bottles. There was no darkroom available, so he awaited nightfall with greatest eagerness, hung some blankets over the window in a room, and began to develop his plates. He told me, later, that it was the most exciting half-hour he ever spent, as he watched little black spots appearing slowly all over the three plates by the dim light of the red, smelly, oil-lamp, making up more and more distinctly the whole negative of the landscape. Upon fixing, the two-second exposure proved to be the best of the three plates. A note to this effect was entered in his photo-diary for further reference. The rest was easy. The following day sunlight produced a print on

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HOPI WOMAN — FORMAN HANNA

LOS ANGELES SALON

Solio paper which was toned, fixed and washed. So well and carefully was all the work done, that my uncle still possesses and obviously cherishes this first of his prints.

Based upon this foundation—together with many similar experiences—he built up his knowledge of photography systematically, without any other help than reading-matter and common sense. Within the remarkably short time of one year he acquired a general knowledge of photography impossible to obtain in any other way. His well-filled notebook was his exposure-meter; and every time that he went out with his camera, this little notebook was his companion—ever ready for reference or comparison.

To-day, twenty years later, amateur photography has been simplified and reduced in cost—as far as the camera itself is concerned—to such an extent that you can find in almost every family a member that has, at some time or other, owned and used a little kodak. A marvelous and flourishing industry has been established to take care of just the requirements of the immense army of amateurs who enjoy picture-making.

But,—spell this word Capital B, Capital U, Capital T,—when we come to examine the results obtained with these simplified modern cameras, we will find that they are far below the standard of the old days of fifteen or more years ago; and the most pathetic part of it is that the average amateur is apparently fully satisfied with his poor or—at best—mediocre results. Now, that sounds as if that modern and simplified camera were at fault; but that is not true. It's the amateur himself who is sorely at fault. Every modern camera is all that the manufacturer claims for it, provided that it is used properly and within its limitations. We are living at a time when hustle and haste has become veritably our second self. Speed is our slogan; anything for *speed*. Virtually everything in our present life has been pushed to the limit of speed during the last two decades. Fortunately, not all of it has lost in quality.

Soon after the first practical hand-cameras were placed upon the market, a new business began—the photo-finisher. You pressed the button, he did the rest, and he charged well for it. With this institution fifty per cent. of the

THE TORREY PINE — HAROLD A. TAYLOR

"trouble" was taken out of photography; but with it, the amateur sacrificed at least seventy-five per cent. of the delight and romance of photography. The development of plates and films, and the printing of the positive were done by professionals, and it was impossible and unnecessary for the amateur to accumulate any real knowledge of photography, at all. He simply pressed the lever, relying mostly on luck for results. Of course, as this was about the only thing he had to do, it made thinking of any kind unnecessary. Is it any wonder that the results are poor? Is it any wonder that good pictures are the exception, or the result of pure luck? The present day snapshooter is so spoiled that, when he finds one or more of his films utterly unprintable, he accuses the finisher. Naturally, he does not know that it requires something more than merely to press the lever on his kodak to get a good picture. Isn't that deplorable?

It may be stated with fair accuracy that the number of real amateur photographers in relation to the number of cameras purchased decreased considerably during the evolution of the modern hand-camera. This sounds like a paradox; but it is true, nevertheless. Naturally, the average standard of quality of the final product fell below that of earlier years. All readers of this magazine, and others, are on the right road to the longed-for goal. You read to learn and to improve; you are bound to get, eventually, what you were after, the moment you invest in your cámera—good pictures. The success of practical amateur photography begins to fade; many even treat it with ridicule.

Let us try to save the situation. Do not look for aid to the professional finisher, as it would be diametrically opposed to his own interests. It is a question for the relatively small but effective army of real amateurs, who should add as many snapshooters as possible to the ranks of practical workers. Few of these "press-the-button artists" know the charm the darkroom offers. Go, tell them about it. Emphasize the better results at greatly reduced expense. The camera has won the race so far; let us see if we cannot pull the man behind it to the front.

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CALM AND SERENE AFTER THE STORM — ALLEN E. CHURCHILL

Winter-Photography in the City

ALLEN E. CHURCHILL

THE balmy days of autumn, with their brilliant colors and golden sunsets, have long passed away. It is now the middle of winter. I have many friends who are amateur photographers and when we all get together of an evening, little else except cameras and photography is discussed. This subject becomes the general topic of conversation for the entire gathering and views are exchanged, suggestions made and individual experiences rehearsed.

After attending several such meetings, I entertained a very unusual attitude toward winter-photography from remarks made at various times by several of my amateur friends. They conveyed to me the fact that most of their number gave up photography entirely during the winter-months. The general program, after summer and autumn had gone, was to pack their cameras away in some dark corner of an unused closet, and let them remain idle and neglected until summer returned again. I was much amazed that such conditions should exist among those who were usually ardent lovers of all things photographic. Finally, I determined to get to the bottom of things and, if possible, find a reason for the apparent lack of interest in winter-photography.

The first person questioned replied in words something like the following: "What pleasure do you suppose I can derive from carrying a camera through the streets on cold days, when it is snowing and icy blasts of wind drive the snow into my face and the intense cold that accompanies it fairly congeals the marrow in my bones —besides, what is there worth photographing on such days?"

I would like to say right here that there is much to photograph. The photographs used to illustrate this article prove clearly that there are

SUNSHINE AND SHADOW
SNOWBOUND
ALLEN E. CHURCHILL

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many excellent opportunities to obtain artistic and pleasing pictures, far different from anything that could be made in summer or autumn. One of them made on a day when a blinding snowstorm swept the streets, shows the possibilities, I think. The wind was so strong that it blew the men's overcoats almost out straight. One man in particular may be seen holding wildly on to his hat to keep it from blowing away. It was made about eight o'clock one morning and it shows a group of the city's toilers hurrying to whence it is again shoveled into trucks and removed to the city's dumping-ground.

However, do not suppose for one moment that the charm of winter-photography is confined only to stormy days. Far from it, for beautiful groupings of highlights and shadows can be obtained on bright, crisp, sunshiny days that often follow snowstorms that have raged all night and cleared off about sunrise. This is the time to go for a walk through the city's parks, camera in hand, looking for pictures. The reason that I

DRAPED IN WINTER-BEAUTY ALLEN E. CHURCHILL

work. However, I will confess that it requires considerable patience to be able to stand in the face of such severe weather and wait calmly for the right moment to release the shutter. Bear in mind also that the man behind the camera must have a plentiful supply of enthusiasm to brave the storm. Scenes such as I have described are usually found on street-corners, where there is space for the wind to sweep at top speed, unchecked by the walls of buildings.

I might suggest another subject. During and after snowstorms, groups of sturdy men will be seen on almost every corner, busily engaged in shoveling the snow that has held up traffic. They toss it into heaps eight or ten feet in height, from suggest parks is because they are usually easy of access and are rich in subjects. Try the following experiment and note the result. Some morning such as I have described, clothe yourself in warm garments, put on a pair of heavy gloves, also a pair of stout boots and start out. Roads and paths are usually broken up into odd-looking heaps of snow by passing of vehicles and pedestrians. The bright sun falling at an angle, casts spots of sunlight and shadow that make beautiful pictures when made against the light. To accomplish this successfully, special precaution must be taken to avoid the halation that results from the extremely bright sunlight striking the back of the plate. Non-halation plates are best.

TOILERS FACING THE BLIZZARD
EQUITABLE BUILDING, AFTER FIRE
ALLEN E. CHURCHILL

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It is always wise to use a slightly orthochromatic plate—my favorite is the Orthonon—it has a thick film and considerable of latitude. It may be backed with opaque, or not, as judgment dictates. In addition, a hood just long enough to avoid cutting off the corners of the plate is necessary. One of these can be made in a few moments out of some heavy black-matte paper, that can be obtained for a few cents a sheet in any photo-supply store together with a tube of liquid glue. If strongly made of several thicknesses wound and glued over one another, it will last a long time and its weight amounts to little.

Be sure to give full but not excessive exposure, as it is necessary to have soft shadows that show detail. I would suggest that the plates be developed in a well-controlled and not too strong developer. A better one cannot be found than the A. B. C. Pyro soda-formula recommended by virtually all the best plate-makers and found in their booklets. It is the standard developer used by thousands of professional as well as amateur photographers, its immense popularity being due to the fact that it is easy to prepare and can be altered to suit any condition. It should be mixed in such proportions as will not develop too much contrast. The negative should be soft yet snappy, and have a proper gradation between its highlights and shadows that will ensure its printing all over. For the assistance of those who have not or cannot obtain one of the booklets mentioned above I will give the formula:

A

Water	16 oz.
Oxalic Acid	12 grs.
Pyrogallic Acid	1 oz.

B

Water	16 oz.
Sulphite of Soda (dry)	2 oz.

C

Water	16 oz.
Carbonate of Soda	1 oz.

For use mix in following proportions:

For Tray.		*For Tank.*	
A	1 oz.	A	1 oz.
B	1 oz.	B	2 oz.
C	1 oz.	C	2 oz.
water.	8 to 10 oz.	water	58 oz.

Temperature 65° to 70° F. Time, 30 minutes.

I think it should be apparent to those who have read this article that it is really worth while to try photography during the winter-months. It is my earnest hope that my little story will arouse sufficient interest to prompt some of the readers of PHOTO-ERA to emulate my example.

Stop!

FREDERICK C. DAVIS

"FUNNY title," you say. "Stop what? Stop development?" No! "Then you mean stopping down the lens." Wrong again. Strangely enough, this sort of stopping has nothing whatever to do with stopping down the lens. I mean stopping motion. And as the title sounded strange to you, that phrase sounds peculiar to me. Can we really stop motion?

Let us assume that we have a camera set up, ready to make a picture, and that the plate covers a space one hundred feet wide. A moving object appears at one side, and crosses the space in one second. Therefore, the image of the moving object crosses the ground-glass in one second. Now let us suppose that the plate is ten inches wide. The object on the ground-glass moves one inch in a tenth of a second. We snap the shutter, set at one one-thousandth of a second. During that time, the object moves one one-hundredth of an inch across the ground-glass. Now let us set the shutter five times as fast: the object will move one-fifth as far—one five-hundredth of an inch. Let us stretch our imagination and set the shutter at one one-millionth of a second. The image will have moved one one-hundredth thousand of an inch, and so on. Therefore, correctly speaking, it is impossible to stop motion. But if we set the shutter so that it moves faster than the image of the moving object moves across the plate, the blurring, due to motion, will be so slight, that it will not be and often cannot be noticed. It is then we say that we have stopped motion. We must tolerate this phrase as we tolerate the "infinity" of the camera-maker.

Many hard-and-fast rules have been set down to stop motion. Incomprehensible tables have been prepared; formulæ have been presented, which, if they had been used, would have taken

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ANNETTE KELLERMANN — WHITE STUDIO

up so much time that when the correct exposure was figured out, the object would be several miles away. Some of these tables and formulæ dwell on the diaphragm-stop. Some do not. It is best to let the stop alone. Use the smallest stop possible under the conditions of light and speed. Overexpose rather than underexpose, referring to light, and not to motion.

Almost all objects, except very slow ones, can be classified under the seven following heads:

Slow walk, trees waving in wind, cattle grazing, move about two and a half miles per hour.

Ordinary walk, slow vehicles, waves, slow boats, and so on, move about five miles per hour.

Running, jumping, athletic moves, average motor-boats, rapid vehicles, ice-skating, diving, come under ten miles per hour.

Steamships, bicycles, automobiles, sleighing, yachts, cycles, trotting horses, and so on, move about twenty miles per hour.

Racing horses, electric cars, speed-boats, fast automobiles, street-cars, etc., come under thirty per hour.

Automobile and cycle-races, trains, airplanes, flight of birds, move one hundred miles an hour.

Many more moving objects could be classified in this table, but the table is given only to enable the photographer to estimate closely the speed of any moving thing.

When the speed is estimated, an exposure is given, as follows:

Speed	Exposure
2½ miles per.....	1/100 second
5 miles	1/200 sec.
10 miles	1/400 sec.
20 miles per.....	1/800 second
30 miles	1/1200 sec.
60 miles	1/2400 sec.
100 miles	1/4800 sec.

Of course, an exposure of 1/2400, or 1/4800, is ridiculous. Besides, the exposures given are for a moving object twenty-five feet away, and when something going one hundred miles an hour passes me I choose to be rather more than twenty-five feet away.

For different distances:

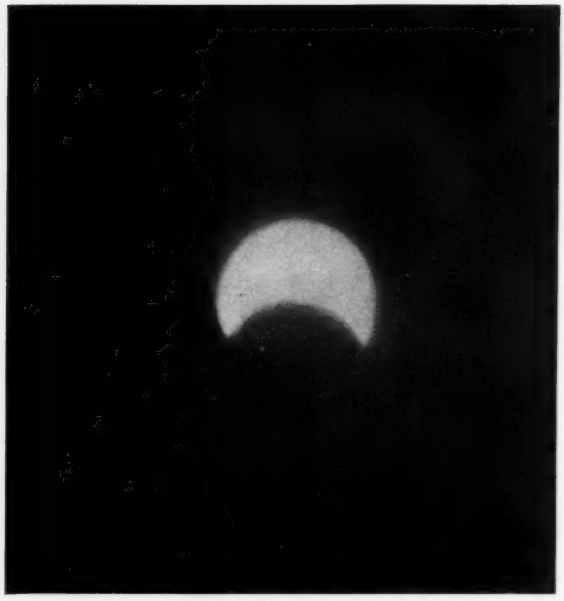
4 feet away, multiply exposure by 6.
8 feet away, multiply by 3.
12 feet, by 2.

Greater distances:

Fifty feet away, divide the exposure by 2.
100 feet, divide by 4.
200 feet, by 10.

These exposures are for objects moving parallel to the plate or film. If the object moves at an angle of five to ten degrees, you may safely give twice the exposure specified. If it moves at an angle of forty-five degrees, you may give three times the exposure.

That is something to know. Looks like a lot, doesn't it? Suppose that a man were running up the street, directly across from you and that you were about fifty feet distant: expose for one-fiftieth of a second. But, perhaps, if you were slow to get your camera set, he might have run ahead, perhaps, twenty-five feet. Then you can give one twenty-fifth or even a twentieth. The tables will click to your memory after a little use. Try them!



ECLIPSE OF THE SUN WILLIAM S. DAVIS

Photographing an Eclipse with Ordinary Apparatus

WILLIAM S. DAVIS

AS an eclipse of the sun or the moon is always an interesting astronomical event to watch, and to record as well, it occurred to me that some readers of PHOTO-ERA might like to know what can be done with regard to the latter without going to the expense of special apparatus; and, therefore, I am giving the results of a few experiments in this direction.

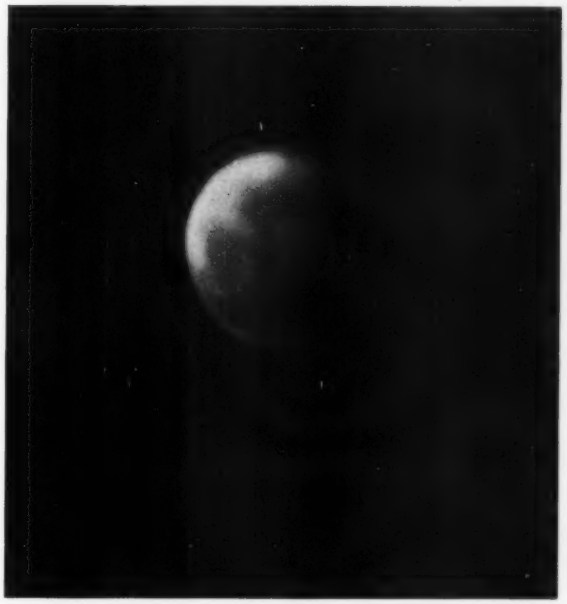
Our illustration of an "Eclipse of the Sun" was made June 8, 1918, at 6.08 P.M. (solar time not "daylight-saving"). Although total in some parts of the world, it was visible only as a partial eclipse along the northern Atlantic seaboard, so that the illustration shows virtually the maximum shadow seen in this part of the country. As the weather was very clear, the point first thought of in connection with photographing the effect was the avoidance of halation around the sun's disc. Consequently, in addition to using a non-halation plate, I smoked the outer surface of an Ingento series "A" ray-filter to a uniformly dark tint by holding it over a small kerosene-oil lamp-flame, minus a chimney. If care is taken to keep the filter well away from the flame, there is no danger of injuring it, and the smoke is easily wiped off afterwards. When placed over the lens, the smoked filter lessened the intensity of the sun's rays greatly on the focusing-screen; but without affecting the definition in any way.

A 4 x 5 long-bellows camera was chosen, and the rear element—about 13-inch focus—of an R.R. lens used at an effective aperture of F/20. The exposure of two seconds through the smoked filter proved sufficient for the Standard Orthonon plate employed which was then developed in a full-strength developer containing a few minims of bromide to ensure a clean negative.

With a lens of only 13-inch focus, the image of the sun is naturally small—about 1/9 of an inch—but if carefully focused, and a negative showing little grain is obtained, almost any amount of magnification is possible. The original print that accompanies these notes is a ten-diameter

enlargement, and still greater linear magnification is possible. The main difficulty with regard to such enlargements is that they are beyond the capacity of some types of enlarging-apparatus. However, there are several ways to get around this. For instance, in making the print just referred to I used the same camera employed in making the negative; but I replaced the lens by one of very short focus, thus obtaining a high degree of enlargement, with comparatively moderate bellows-extension. An improvised holder to receive the negative and a piece of fine ground-glass back of it, to diffuse the light, was placed in front of the lens, both camera and negative-holder being set on a board and turned toward a window away from direct sunlight. The printing-paper was inserted in a plateholder and kept flat by a piece of clear glass laid over it, allowance being made for this difference in the focal plane when focusing.

The short-focus lens mentioned, I made up several years ago for low-power photo-microscopic work by mounting two single lenses in a block of wood, with a small-aperture stop between, obtaining in this way a combination of 1½-inch equivalent focus. Another way to obtain a short-focus lens for enlarging is to attach a strong pocket magnifying-glass over the regular lens, and use a very small stop, when the results should be satisfactory, since only a limited field must be covered. If one possesses one of the smaller vest-pocket cameras, the back may be removed and the camera set over the opening for the front-board of the larger apparatus, thus giving one the use of a good lens, usually between 2½ and 3-inch focus. Any of the above expedients are useful when one wishes to pick out a small part of a negative and enlarge it considerably. In astronomical photography it is often very important to enlarge a certain part of the negative.



ECLIPSE OF THE MOON — WILLIAM S. DAVIS

The picture of a "Partial Eclipse of the Moon" was made a number of years ago, and in making it I used the 20-inch rear element of a symmetrical lens stopped down to an effective aperture of approximately F/56. The exposure was three seconds on a Carbutt "B 20" plate, which to-day would be considered a slow emulsion, although the negative does not seem to show signs of underexposure. It is needless to say that I did not use a smoked ray-filter!

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LOUISE GROODY
ALFRED CHENEY JOHNSON

Lantern-Notes

THE lantern-lecture has done good service both for entertainment and propaganda-purposes during the long-drawn-out period of the war. There is every likelihood of its becoming a still more popular function now that peace is with us once more. I can foresee a great revival in photographic society meetings. As the membership returns to normal and lighting-restrictions abate, the lantern-evenings that have always formed a substantial item in the entertainments provided by photographic associations will become more numerous than ever.

Many members of societies who have had opportunities during the past four years to procure pictorial and other material in relation to the war will probably be eager to put their experiences and photographic records into lecture-form, for the benefit of members of their own and other societies. It may be well to point out to those who are contemplating the preparation of such a lecture, that, however interesting a series of incidents may be depicted, their effect will be entirely discounted unless they are arranged in such a sequence as to make a connected story, and at the same time a story is provided that adequately and appropriately supports the pictorial element.

There appear to be four kinds of lantern-lectures for which the photographer-lecturer may be responsible. First, there is the interesting and well-delivered lecture with good slides. This is welcome always. Secondly, the series of bad slides shown by a good lecturer. Thirdly, the collection of good slides accompanied by an indifferent or incoherent discourse. Both of these are tolerable in the ratio of the goodness of the slides or the lecture respectively. Fourthly, there is the set of poor slides conjoined with the bad lecturer.

The first-mentioned is generally the product of the "old hand," who is not only a good photographer but a good speaker. He knows what he has to say and says it well. The second class is more excusable, as the pictures may have been made under conditions of extreme difficulty. For the third class there is little excuse, and for the fourth none at all. It is more particularly with the third class that the difficulties arise in photographic societies.

The photographer who sets out to prepare an illustrated lecture should have three definite points in view—first, he should have a clear idea of the story he is going to tell: and no matter whether this deals with one particular incident or a series of incidents, there should be some definite connecting link between the various parts, and an unbroken chain of interest throughout the whole. Secondly, he should, if possible, deal only with those features of his subject that he can illustrate with his pictures, and of which he has personal knowledge; as, unless he is an accomplished *raconteur*, many of the points are likely to fall flat unless the eyes as well as the ears of the audience are attracted. Thirdly, having clearly mapped out the points of the lecture and the possible illustrations, he should see to it that his slides are the very best that can be made from the negatives. Finally, he should rehearse the whole discourse, with the slides, so that it can be delivered with little or no reference to a written manuscript.

In the preparation of a lecture, or a series of notes therefor, the simplest plan is first to arrange the slides in approximately the order that they are to appear on the screen; and then, in the comfort of one's own home, to spend a quiet evening going through them, examining each one carefully in the hand against a well-lit sheet of white paper, and jotting down the title and any incidents the subject suggests. This is best done on a series of slips of paper, numbering each with the same number as that on the slide. Each slide can then have a little description of its own. At first, it may be possible only to write the title and a few disconnected notes; but on going through the slides thoroughly several times it will be found that a number of points arise which can be referred back to definite slides, and are accordingly entered on their respective slips. Little anecdotes or other verbal trimmings which occur in the arrangement of the subject can also be included in the same way.

Each slip should finally be copied out carefully and legibly, and, if possible, typewritten on small thin cards about the size of postcards. There is also a chance of the notes being considerably abbreviated. Finally, on going through the whole series, it will be found that not only does each slide suggest its own story, but if the job has been done conscientiously, the sequence of the slide and the continuity of the lecture will gradually become memorized by the lecturer, and elaborated until both work harmoniously.

Then, armed with this small bundle of card-notes, the lecturer can sally forth to the lecture-room with his box of slides—arranged in proper order to hand to the lanternist—with every confidence that he can take his place in front of

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the screen and talk connectedly and interestingly for an hour or two to provide an entertaining evening for his audience.

As in most lecture-rooms a desk with a shielded candle-light or electric bulb is provided, it will be only necessary for the lecturer to glance at his cards from time to time to refresh his memory when each slide appears; and if care is taken to change the cards, say from top to bottom of the little pile, each time a slide is changed he can rely upon having all his notes concerning that particular slide to hand for instant reference if occasion demands. If the lecture proves to be popular, and it has to be given on many occasions, he will soon find that he is able to dispense with the notes altogether, the mere appearance of the slide on the screen being a sufficient reminder of all there is to say about it. There is no doubt that the greater confidence the speaker acquires—that confidence that is born of knowledge of the subject—the finer and more agreeable will be the lecture, than one given by a speaker who is in difficulties from the start.—*The Amateur Photographer.*

By Other Lights

(Sixth of the "Professor Pyro" Talks)

MICHAEL GROSS

BEFORE leaving the subject of our last talk—color photography," began Professor Pyro, "I should like to mention briefly a few interesting color and light departures in picture-making that have been made at various times by various people.

"About fifteen years ago, Professor Robert Williams Woods, of Johns Hopkins University, gave the photographic world an interesting and illuminative paper on the results he had obtained by making photographs through the infra-red and ultra-violet rays of light in the spectrum."

Professor Pyro paused to give the class a chance to express its astonishment at the learned Mr. Woods' feat, but the "express" must have been a freight-car, for it arrived very slowly.

Suddenly, the solution for the lack of enthusiasm dawned on Professor Pyro and he said, with a smile:

"It would seem that, without further elucidation on my part, the statement regarding the work of Professor Woods sounds about as impressive as if I had spoken the words in ancient Sanscrit. But I don't blame you one bit for being perplexed," he went on. "I candidly confess that the first time I heard the names mentioned I thought 'infra-red' was the name of a new flash-light powder, whereas 'ultra-violet,' I imagined, was either a fancy brand of perfume or a new kind of ray-filter. Perhaps a moment's explanation will serve to make these two terms clearer to you.

"You all have seen, no doubt, the rainbow-colored band that is formed upon the wall of a room when a beam of sunlight passes through a prism of glass—especially through one of those dangling crystals with which some of the old-fashioned chandeliers were so profusely hung. This vari-colored band is called a spectrum and, if we examine it closely, we will find that though the colors seem to merge one into the other, the band consists really of seven distinct shades——red, orange, yellow, green, blue, indigo and violet—the colors being in the order in which I have mentioned them.

"But these seven colors, which we are able to see, do not include all the colors in the band. The truth of this statement can be determined readily by darkening a room so that only the beam of sunlight necessary to produce the spectrum is admitted. If we now expose a photographic plate, that is sensitive to the entire spectrum, in such a way that it receives the impression of the band of color, we will find, upon development, that the image extends to a considerable distance beyond the violet at one end of the spectrum, and far beyond the red on the other end. This experiment proves that there must be a region beyond the violet and the red which the eye cannot see, but which a sensitive photographic plate is able to register. This region, on the violet end, has been given the name of 'ultra-violet,' and 'infra-red' is the name given to the region on the red end. Now that we have a clearer conception of what these terms mean, let us get back to Professor Woods' series of experiments.

"By covering the lens of his camera with a combination of glasses which absorbed all visible light, but transmitted the invisible rays which are found beyond the red of the spectrum, Pro-

BLUSTERING MARCH JOHN PAUL EDWARDS

fessor Woods succeeded in obtaining several landscape-photographs taken solely by means of infra-red light.

"These landscapes were remarkable in that, though photographed in broad daylight, with the sun shining brightly, the sky photographed a dead black, the green trees came out a pure white, and the foliage had the peculiar gray tint you have no doubt observed at night on a snow-covered stretch of lawn.

"Through a process of evolution, our eyes have become sensitive to only a certain region of the total spectrum which comes to us from the sun, but the pictures made by Professor Woods give an idea of exactly how the world would look to us if it so happened that our sight were sensitive only to the infra-red rays. We would live in a sort of perpetual 'negative' state—with all whites appearing black and all blacks, white.

"Professor Woods obtained still more wonderful results through the utilization of the rays at the other end of the spectrum. By a peculiarly constructed lens, cut from a crystal of quartz and coated with a chemical substance, he succeeded in preventing the passage of all other rays of the spectrum, while letting in freely the ultra-violet rays. The photographs obtained through this lens were remarkable because of the fact that, though made in full sunlight, none of the objects in the picture cast a shadow. This phenomenon, Professor Woods found, was due to the fact that the short ultra-violet rays were so scattered by the atmosphere that only a small percentage of them reached the ground in the form of shadow-producing rays from the sun.

"Another scarcely-to-be-believed fact that Professor Woods discovered, was that ultra-violet rays would not pass through even the clearest and most transparent sheet of window glass. In other words, if your eyes were sensitive to ultra-violet rays, but to no other color, you could stand in a room built with clear-glass

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walls, and though the sun was beating down upon the scene, you would be in total darkness. With your eyes sensitive to this color, and to no other, you could not determine, by looking through it, whether a clear-glass bottle was full or empty, nor could you tell the time of the day unless you first took the glass crystal off your watch, because of the fact that you could not see through it.

"Professor Woods painted a sign on a piece of cardboard, using for the purpose Chinese white —the whitest substance known. On the same board, he painted a few words in ordinary printers' ink. A photograph of this sign, made by ultra-violet light rays, showed the Chinese white blacker than even the printers' ink—presumably as solid a black as could be obtained. This experiment reversed, with a vengeance, the old saw which runs: 'Black is black, and white is white—only a fool says one is the other.'

"I have no doubt that all of you have, at one time or another, utilized in picture-making various kinds of lights, including daylight, electric light, Cooper Hewitt light, and flashlight. But it remained for Professor William R. Brooks, of Hobart College, to obtain photographs and make prints by Venus-light or the light shed by the planet Venus. This light was not concentrated in a lens or through a mirror, but was used just as it came from the sky.

"A photographic negative, with a piece of sensitized paper under it, was so placed that the direct rays of Venus fell upon it, and in thirty-five minutes the image was fully printed upon the surface of the paper.

"Professor Brooks also made positives by the same method, and succeeded in obtaining some beautiful impressions of laces by placing them in contact with a piece of printing-out paper and exposing them to the light of Venus. All of the Professor's experiments were performed at the darkest hour of the night—immediately after Venus had risen and just before the approach of dawn.

"Now that you are familiar with this series of experiments, none of you need be surprised if you put out a few filled printing-frames some night and then, happening to get up before day has dawned, find your pictures all printed. Don't ascribe the phenomenon to photographic spooks that you believe haunt your house. It will be only good, old Venus—turned into photographer.

"Of course," Professor Pyro concluded, "there have been various other photographic departures than those I have mentioned, such as sending photographs by telegraph and even by wireless; utilizing photography to detect forgeries in handwriting; pictures made under the sea and from the clouds; micro-photography and so forth; but time does not permit my wandering off into these bypaths, interesting though they may be. We must hew to the broad path, let the photographic chips fall where they may.

"In my next talk, I will take up a field of picture-making that has created a new art, brought a source of entertainment and education to the masses as well as the classes and created a business that ranks in size, importance and wealth invested with some of our greatest industries of to-day—kinematography or, as it is popularly known, the 'movies.'"

Temperature, Detail and Density

NOW that the colder days are upon us, the worker will do well to look to the temperature of his solutions, neglect of which is a common, if unsuspected, cause of trouble. Some time ago, we were consulted as to some negatives which had all the indications of underexposure. They were very thin. Upon examination it was found that there was abundant shadow-detail, which gave the lie to this supposition. It was discovered subsequently that the developer was kept as a stock-solution in a cold darkroom and, when used, was doubtless much below its normal temperature, thus producing the weak negatives. With some formulæ, a low temperature causes the solution to become almost inactive, and the negatives will be found to lack detail and density. Those who develop by the time and temperature method, know that development at a higher temperature will give negatives of more pluck, than those given a longer time with a colder solution. In order to overcome the general lack of contrast in winter-negatives, it is a good plan to warm the developer up to say 75° F., if the plates employed will stand it without frilling; though if the fixing-bath—which is likely to be colder than the developer—is treated in the same way, the danger of frilling is largely eliminated. With some brands of plates, there is a tendency towards chemical fog, but a few drops of ten per cent. bromide solution will prevent this. Much of the same may be said of development-papers. We know of one brand that will never give satisfactory results if the developing-solution is less than 50° F.; but most workers give very little attention to such matters when developing bromide prints. Trouble in this respect is the more likely to be met during the early autumn, before the darkroom is properly warmed, as it should be during the winter, a reminder which perhaps will suggest an explanation of failures at the present time.

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President Wilson Addressing Congress

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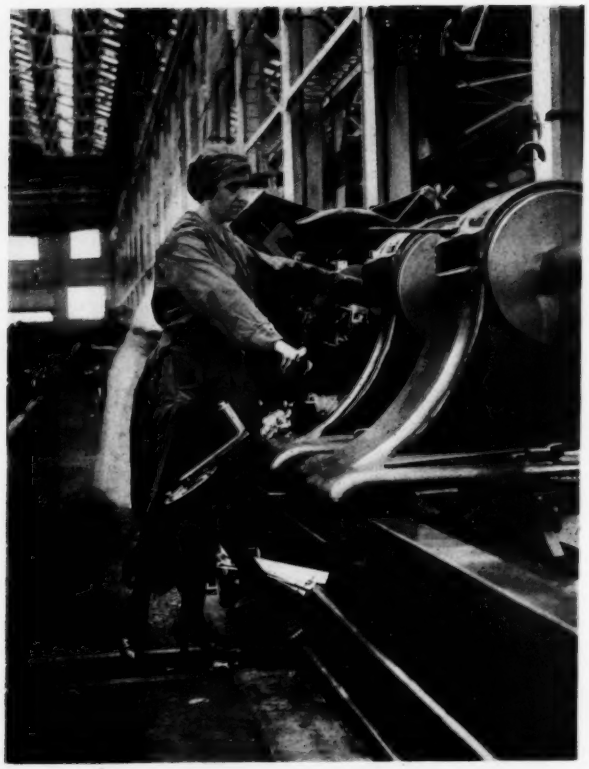
SECOND PRIZE
WAR-PRINTS COMPETITION

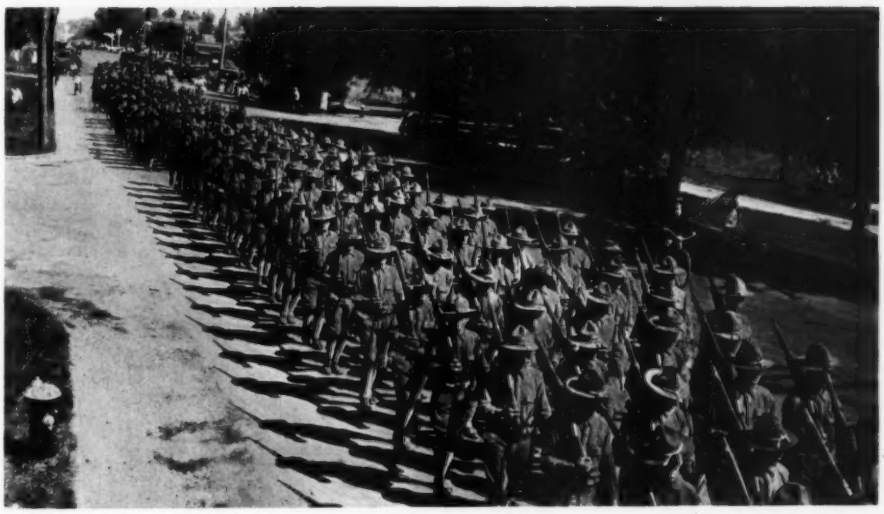


AMERICAN WOMAN WAR-WORKER — FRANK E. COLBY

Photo-Era's War-Prints Competition

WILFRED A. FRENCH

SOON after the United States entered the present war, the War-Plans Division of the General Staff expressed a desire to procure for the official files of the Army War College a comprehensive series of photographs that illustrated a war-activity anywhere in the United States. The chief of the Historical Branch of the War-Plans Division immediately issued a general request for photographs of this character, which, if acceptable, were to be included in the permanent historical record as a part which that particular locality had taken in the war. The matter was placed in charge of Major Kendall Banning, S.R.C., of the Pictorial Section. Major Banning proceeded at once to solicit, and he received, the patriotic assistance of PHOTO-ERA in the project. To facilitate the work, collectors of photographs—or pictorial historians, as they were designated officially—were appointed in different sections of the United States. At the suggestion of the Editor, the department appointed Herbert B. Turner, a prominent photo-pictorialist, of Cambridge, as pictorial historian and general representative of Massachusetts. Mr. Turner was able to photograph and to collect, with the aid of official, professional and amateur photographers, hundreds of photographs of various war-activities. However, these pictures did not seem to be of



LEAVING FOR CAMP
READY FOR SERVICE
JAMES J. CONNORS

FIRST PRIZE WAR-PRINTS COMPETITION

Children Buying Thrift-Stamps — *Mrs. W. Durrant*

Honorable Mention —War-Prints Competition

the required standard, possibly because of insufficient inducements, aside from the appeal to the photographers' individual patriotism; for the department had arranged with the principal news-syndicates of this country to purchase unmounted prints of war-subjects at a nominal rate of seven cents each, which is the price at which official United States prints are sold to news-syndicates. The department explained that this price covered merely the actual laboratory cost of production, and that the photographer's practical interest in the movement would be based on purely patriotic grounds. Therefore, on being informed that the local yield of war-pictures failed to meet the expectations of Mr. Turner, the pictorial historian, the Editor adopted the suggestion made by that official, and instituted a prize-competition which was advertised in the November and December issues of this magazine, the closing-date being December 15, 1918. The number, as well as the quality of the pictures yielded by this competition, was gratifying. The awards were made as follows—the first, fifteen dollars, to James J. Connors, professional photographer of Springfield, Massachusetts; the second, ten dollars, to Frank E. Colby, staff-photographer of the *Boston Evening Transcript*. The only Honorable Mention—although prints by other participants were equally meritorious—was awarded to Mrs. William Durrant, of Plainfield, New Jersey. The judges, appointed by the Editor, were Col. Edwin T. Cole, U. S. A., commanding the S. A. T. C. of the Massachusetts Institute of Technology, and, before he was transferred from his post in New Mexico to Cambridge, an amateur photographer of considerable practical experience; Herbert B. Turner, photo-pictorialist, of Cambridge, and the Editor.

The highest award was conferred upon Mr. Connors for an idea that he had expressed by two separate pictures. In the first picture, we see a large body of drafted men, from various walks of life, on their way to the military training-camp. In the second, these men appear as well-drilled, disciplined soldiers, ready to obey the order that will take them overseas to fight for the cause of humanity. The picture, "Woman in the War," by Mr. Colby, illustrates a war-activity that has won universal admiration and respect and, in a greater degree, perhaps, than the one that ministers to the needs of the sick and wounded—the Red Cross. Here, in the field of industrial labor, the women of the nation were suddenly called upon to perform a kind of work that belonged exclusively to men, work that required technical skill, physical strength and, in many instances, a high degree of personal courage. It now remains to note the children's interest in the war—a subject interpreted with sympathetic ability by Mrs. Durrant, in her Honorable Mention picture. The chief desideratum in these war-pictures was the forceful, convincing expression of an idea, rather than a purely artistic interpretation; yet, in her picture Mrs. Durrant was able to include a degree of pictorial beauty.

It may interest our readers to know that all prints received for this competition, including the prize-pictures, were delivered to the pictorial historian, Mr. Turner, who forwarded them to Major Kendall Banning, at Washington. This was done in full accordance with the rules of the competition, as published in two editions of PHOTO-ERA. The participants in this highly interesting competition are here sincerely thanked, one and all, for their prompt and liberal response. They enjoy, in addition, the satisfaction of having done their share in an important field of patriotic endeavor. From the material point of view, they will be glad to know that their contribution to this cause does not preclude further use of the original negatives. In other words, rights of possession have not been surrendered thereby. The owners are quite free to use them, hereafter, in any way they desire.

THE first object of the professional photographer should be to satisfy his client, the second to satisfy himself. When these two objects can be merged into one, all is well; but if either has to be sacrificed, it must be, to some extent, the latter. The skilful operator, who has thorough control of his light and materials, usually has a predilection for a particular style, and often loses sight of characteristic points in the sitter in bringing him into conformity with it. Hence, the less technically skilled operator, even the raw amateur, often scores a success by securing a real portrait, the imperfections of which are passed over for the sake of its human interest. This is especially the case with people who do not often visit the photographer, and who feel rather ashamed to do so. With such, there is often a feeling of constraint and a fear of looking foolish, which results in a stiff, repellent picture, with which neither the sitter, his friends, nor the photographer are satisfied. It is far better with subjects of this class that the photographer concentrate all his powers on the task of reaching the real personality of the sitter, and to overlook any little defects of pose or drapery.

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Practical and Humorous Experiences in Photography

Part II. Developing, Printing and Enlarging

A. H. BEARDSLEY

IT was during my Brownie days that I first attempted to master the art of developing. There are certain incidents which make an indelible impression on the mind and that sear the heart with the hot iron of bitter experience. Developing was one of these. Personal, social and financial disillusion followed in quick succession.

My first exposures with my new Brownie camera had been astonishing to me—also to my friends and relatives. In fact, three of the pictures were so good that to this day I have been unable to improve upon them. Over night I became rated as a first-class photographer by friends, relatives and others who did not know anything about photography. Suddenly something went wrong. After I had spoiled a few dozen pictures, even my most ardent supporters began to murmur among themselves. Certain remarks reached my ears that caused me to begin a rigid investigation at once. With all due allowance for my inexperience, I had a suspicion that all was not well in the developing- and printing-department of the corner drug-store. At length, I mustered sufficient courage to confront the soda-candy-patent-medicine-prescription-kodak-counter clerk who scowled at me with a "well-what-do-you-want" expression on his face. Briefly, and in well-chosen language, I implied that his developing- and printing-department was not giving *my* films the attention they merited. What followed is too vitriolic to record verbatim. Suffice it to say, that I left that drug-store hurriedly, never to return.

Although, naturally, not of a morbid turn of mind, I felt crushed. No ray of light illumined my photographic horizon. Without mentioning any names, I knew several persons who had a diabolical way of asking how my last pictures turned out. Of course, I forced a smile and replied nonchalantly that really I did not know; but that I would tell them later. I knew well enough that there would be no "later" about it—it was all over, *then*.

One day, I formed a stern resolve—I would do my own developing, printing and enlarging. Corner drug-stores and their kind would realize that the little amateur was not so helpless and insignificant as they might have thought him. Without further delay, I purchased a complete developing-and-printing outfit. On the evening that I returned home with my new purchase, I understood the exquisite pathos that lies in the immortal passage, "A prophet is without honor in his own country." Pointed, caustic remarks were made by members of the family with regard to my prowess as a photographer, in general, and my ability to develop a film, in particular. The consensus of opinion was that great trouble was about to descend upon our hitherto happy household. At last, by superior lung-power I succeeded in making myself heard above the uproar. With infinite dignity and diplomacy I stated my case. At the conclusion of my account of the crushing blow administered to me at the corner drug-store, several of my immediate family wept—whether from sympathy or mirth, I have been unable to decide to this day. However, I obtained the solemn promise of all those present that they would suspend judgment until they beheld my first developed film.

In the house that we occupied, there was a particularly nice white-tiled bathroom. An operating-room at a hospital was no whiter or cleaner than our bathroom. Obviously, this was ideally suited to developing. One concession I was obliged to make in order to enjoy these exceptional facilities—a time-limit, not to exceed one-half hour, was imposed upon my exclusive occupancy of the aforesaid bathroom. With this concession asked and granted, I hurried to make the necessary preparations. According to the instruction-book, about twenty minutes sufficed to develop one film. I shut the blinds and pulled down the shade. With great care I arranged the three trays in proper order, *i.e.*, the one containing water, first; the one with the developer, second, and the tray marked HYPO, third. In front of the tray containing the developer, I placed the new oil darkroom-lamp. Next, I partly filled the bathtub with water, ready to receive the film after it had been cleared in the hypo. Then I prepared the developer and acid-fixing bath, poured each into its tray and lighted the darkroom-lamp. With film clutched tightly in my left hand, I turned out the electric light. For a moment all was pitch-black, then I gradually discerned the red light of the lamp. Just as I was about to remove the paper from the roll of film, I happened to glance toward the window—it fairly blazed with points of white light from the street-lamp

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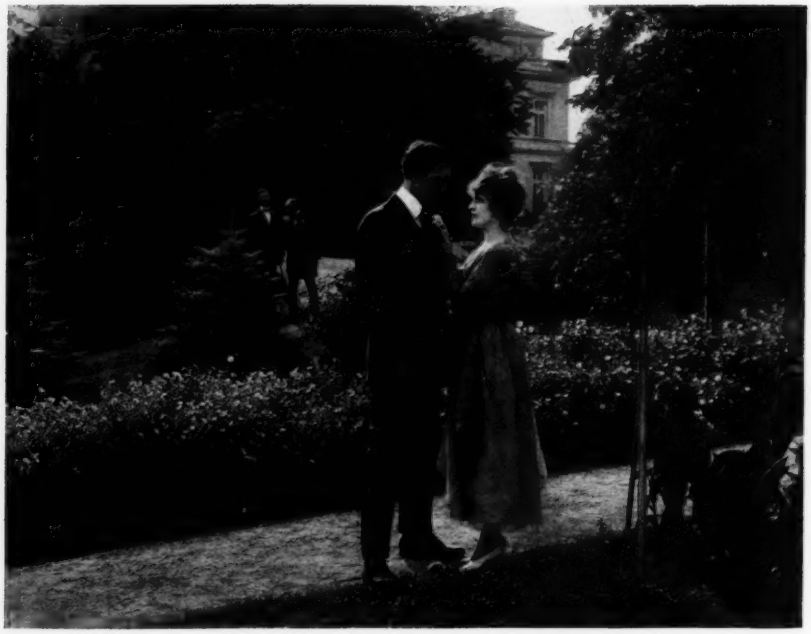
ALBION — THE WHITE WALLS OF ENGLAND
F. J. MORTIMER, F.R.P.S.



GARDEN-SCENE FROM "SECRET STRINGS" METRO FILM CORPORATION

directly outside. Even I realized that there was too much light to be safe. With ten minutes of my precious time already gone, I had to turn out the light, unlock the door and hurry downstairs to beg for the temporary use of the couch-cover, to put over the window. By the time I had quieted the opposition thus aroused, five more minutes were gone. At length, after marring the white woodwork in my attempt to fasten the couch-cover securely over the window, I turned out the light a second time. My efforts had been crowned with success—the bathroom was absolutely light-tight.

All this time the new darkroom-lamp had been very busy. Nothing short of a volcano in active eruption can out-smell and out-smoke a new darkroom-lamp. As its chimney became heated, the enamel blistered and peeled off to the accompaniment of a strong odor of burning paint. If the wick was turned up enough to give sufficient light, the lamp smoked like a blast-furnace; if it was turned down to prevent smoking, one might as well develop in the dark. Taking it, all in all, by the time I was ready to develop my film, that bathroom was a combined boiler-room, Standard-Oil refinery and gas-works. Beads of perspiration, due to heat and nervousness, began to gather on my forehead. Only by a mighty effort did I control my desire to postpone developing to another evening in the remote future.

Just as I grasped the film to remove the paper from it, some one pounded on the door to ask how I was getting along. So sudden was this interruption, that I made a wild jump. This caused the film to snap out of my hand and to roll as far under the bathtub as it could go. In a desperate attempt to catch the film, I ran head on into a chair which, in turn, slid against the bathtub with a crash. Needless to say, these various accidents only served to increase the interest of the person outside the bathroom-door. With a hurried assurance through the keyhole that all was going finely—which it was not—I groped about under the bathtub in search of the film. This I recovered finally, after bumping my head repeatedly on the edge of the bathtub.

At length, I proceeded to unroll the precious film from its paper-covering. A steel-spring is no more difficult to manipulate than a piece of coated celluloid before it is wet. With con-

siderable difficulty, I managed to get one end of the film into the preparatory rinsing-bath of water. By this time the lamp was smoking again like a roundhouse. Without thinking, I released one end of the film in order to turn down the lamp. As quick as lightning, the dry part of the film curled up like a pipe-stem around the part that was already wet. Snatching the film hurriedly from the water in which it lay submerged, I tried to unroll it. Wherever the dry emulsion or coating had come in contact with a piece that was wet, it stuck, and stuck hard. When I finally got the film unrolled again, large pieces of the emulsion or coating had been torn from the celluloid-base. Despite the heat of the bathroom, I turned numb and cold. With grim foreboding, I managed finally to get what remained of the film thoroughly wet. Then I transferred it to the developing-solution. In a few moments, the film lost its creamy color and finally became semi-transparent. This reaction was not according to the outline in my instruction-book. However, I was pressed for time and, gasping for breath, I continued to "develop" with feverish haste. At length, I decided to inspect the result and held the film up to the lamp. Never was there a finer piece of clear celluloid to be seen! Not even a trace of an image was visible. An intuition, not of this world, led me to look carefully at the tray containing the "developing-solution." It was marked HYPO! I had fixed the film before developing it. How it happened I do not know; at any rate, the fact remains that in some manner I had shifted the trays about. Without a doubt, I had a *marvelous* film to display for the judgment of my nearest of kin!

As I stood leaning heavily against the washstand, crushed by the disaster that had befallen me, some one knocked loudly upon the bathroom-door. Whoever it was, reminded me with some asperity that there were others in the house who might like to use the bathroom. Unexpectedly my hand slipped on the wet surface of the washstand and my new glass graduate fell to the floor with a crash. In my eagerness to prevent the trays from following suit, I kicked what remained of the graduate against the bathtub with a still more terrifying crash. By this time, the members of my family were mobilized outside the bathroom-door demanding instant admittance. Reluctantly, and sick at heart, I opened the door. The members of my family confronted me, and on their faces there was that which boded no good thing for me. Behind me, a clean white bathroom lay defiled by hypo-stains, soot and ill-smelling odors. A slimy piece of celluloid was all that I had to show for it all. The judgment of the family was no longer suspended—it found expression then and there!

Although developing-tanks have robbed the darkroom of much of its popularity, it must be conceded that often better pictures are the result. I can remember well the storm of opposition that developing-tanks aroused in the bosoms of aspiring and dabbling amateur photographers. They maintained that if good results could not be obtained by developing in a darkroom, certainly there could be no advantage in putting the film to soak in a tank. The stock argument employed by the opposition was to the effect that over- and under-exposure could not be handled effectively by the tank-method. Without further reference to that unhappy controversy, let me state emphatically that to-day the developing-tank has met the exacting requirements of amateur and technical workers and that the photographer, who decries them, is *persona non grata*. The camerist who has the requisite darkroom, and the leisure to use it, can indulge in the darkroom-method to his heart's content. Many amateurs, of a chemical turn of mind, enjoy experimenting with different reactions fully as much as others derive their pleasure by obtaining printable negatives. Certain special films and plates must be developed in a well-equipped darkroom; but aside from these, the developing-tank meets all requirements. To-day, there are on the market developing-tanks for plates, roll-films and film-packs. The average amateur is courting trouble, if he does not use one. Their simplicity of construction, as well as usefulness and durability, can no longer be questioned.

Before leaving this subject of developing, let me recall an unfortunate but salutary experience with a developing-tank. At one time, I had even less money than I have now, and I sought ways and means "to make the camera pay for itself." A wealthy gentleman of my acquaintance bought an estate which he intended to remodel to suit himself. However, before beginning to make the contemplated changes he wished to have some pictures made of the estate as he found it. Fortunately, he decided to entrust the work to me. With marked courtesy he called for me in his limousine and we motored into the country. We spent an hour or more in and about the estate photographing each point of interest until I had used up an entire twelve-exposure film. That night, I decided to use my new developing-tank and forego the usual tedious tray-developing in my improvised darkroom beneath the cellar-stairs. With infinite care, I read every word in the instruction-book. I mixed the developer, filled the tank with it,

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placed the fixing-bath beside it and began the somewhat tricky threading of the film to the red celluloid-apron, which was to protect the film from becoming light-struck in transferring it from the wooden loading-box to the tank. With the film duly threaded to the apron, I placed the light-tight lid on the box and began to wind the film and apron together. This done, I transferred the apron—now securely wound around the film—to the tank, took the time and went out on the piazza for a twenty-minute interview with my pipe. At the end of twenty minutes I returned, removed the film from the tank and began to unroll it from the apron. Imagine the bitterness of my disappointment when I discovered that only the edges of the film had been touched by the developer! To make a harrowing tale short, I had threaded the film to the apron contrary to instructions, *i.e.*, the emulsion-side of the film—containing the pictures—lay face against the apron and the *paper backing* of the film had received the full action of the developer. The exact reverse would have been the result had I threaded the film and apron together correctly. Needless to say, a short motor-trip was all that I realized from this attempt "to make the camera pay for itself."

(*To be continued*)

Stripping Negatives for Storage as Gelatine-Films

THE conditions for the supply of dryplates have naturally turned the thoughts of photographers towards methods which may be employed for returning the stipulated quota of glass whilst retaining in their possession such negatives as they judge will be of value from the viewpoint of re-orders. In ordinary times, one would not recommend as a working system the stripping of the negative film from its glass support and its preservation in the form of a thin sheet of gelatine without other support. But it can readily be understood that many studios may be so circumstanced as to find it desirable, if not necessary, to adopt such a plan as this; and therefore it may be of interest to say something on the practical means which may be adopted to this end.

The stripping of a gelatine film from its glass support is by no means a difficult business, and the process which for some years past we have regularly recommended in the "Almanac," namely, that of Holcroft and Middleton, is one which is thoroughly reliable. But it is slow, it is not suitable for the stripping of films which are to be preserved as such, and, further, it demands the use of methylated spirit. On these three different accounts, it is not a method which can be applied usefully for the purpose now under consideration. Instead, it is necessary to employ a process in which the gelatine film is tanned thoroughly before removal from the glass; that is to say, so hardened that it can be handled and stored as a thing by itself without fear of being damaged under such reasonably careful treatment as so delicate an article requires. For this purpose, the most suitable method is a modification of one of which very complete working-details were given some time ago by Mr. R. B. Fishenden, of the Manchester College of Technology, by whom it was worked out. In this process, the gelatine film is first hardened in a bath of formaline and then detached from the glass by means of a similar bath of formaline, but containing also hydrofluoric acid. The advantage of the process from the viewpoint of those who may require to treat considerable numbers of negatives by it, is that negatives may be treated in batches in the plain formaline bath, whereas the action of the second bath, containing hydrofluoric acid, is rapid. It should be said that we would not claim for the process a degree of reliability which may be ascribed to the Holcraft-Middleton method, meaning by "reliability" the power of the process to strip with certainty even negatives which are of considerable age, and may have become horny and hard with time. But we do not think that any inferiority in this respect need trouble photographers in the present circumstances, since from the nature of things the negatives to be treated will be those of comparatively recent date, and will not have become hard and horny with time.

The first step in the process is to cut through the gelatine film to the glass with a sharp rigid knife close to the four edges of the plate in order to cut away any emulsion coating which may be adhering to the edges of the glass. The plates are then immersed in formaline, the commercial liquid as purchased, for ten minutes or so. The formaline bath may be placed in a grooved tank, and is used best in a tank, not only on account of handling a number of plates at once, but

LAKE LOUISE, MTS. BEE-HIVE AND ST. PIRAN — CHARLES H. BAYLEY

because the vapor of the formaline can be prevented more or less from escaping by means of a lid on the tank. After this first treatment, during which the gelatine film becomes thoroughly hardened, the plates are transferred, or only so many of them as can be expeditiously handled, to a similar bath of formaline to which commercial hydrofluoric acid has been added in the proportion of two per cent.; that is to say, one-half ounce of the acid to twenty-five ounces of the bath. This second bath should be used in a vulcanite dish. It is necessary for the negative to remain in this second bath only for the matter of twenty seconds or so, after which the negative is removed from the solution, given a rinse under the tap, and the narrow edgings of gelatine then stripped off. It is then given a further short wash in order to remove traces of acid. This washing is done best in a flat dish into which a gentle stream of water is led; washing in a tank, particularly with any vigorous flow of water, is likely to disengage the film from the glass prematurely and cause many difficulties.

The negative is now in a condition to have its film removed from the glass, which is done by laying upon it a slightly larger sheet of tough paper, such as good writing-paper, soaked previously in water. The paper is brought in firm contact with the negative by careful use of a squeegee. Undue action of the squeegee must be avoided, otherwise the negative is apt to be distorted. A corner of the paper is then raised, and a thin, pointed knife used to ensure the corresponding corner of the negative adhering to it. This being so, the paper can be removed, carrying the gelatine film with it.

In order that the film may dry without shrinking or distortion, it is necessary to have it upon a glass plate, and a supply of such plates sufficient for dealing with a batch of negatives dealt with at a time requires to be kept. These plates are cleaned and polished thoroughly with French chalk, as is done when using them for the glazing of prints. The gelatine film, still thoroughly wet and adhering to the paper, is then brought down upon a clean glass plate, and, again by means of a thin, pointed blade, the paper is removed, leaving the film upon the glass. The film then requires to be left to dry slowly. Any hurried drying is certain to lead to crinkling of the film,

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OLD NED J. HERBERT SAUNDERS

and for the same reason it is necessary to avoid drying in a place where there are irregular currents of air. The best plan is to lay the glass plates exposed to the air of a moderately warm room, the windows and doors of which are closed. Those who may have had occasion to dry the now perhaps forgotten Cristoid films, will recognize the need of this precaution, although the ordinary film of a negative is thin in comparison with that of a Cristoid film, and dries in a correspondingly lesser time and with less likelihood of distortion. When the film is perfectly dry, it is peeled off the glass, and can be kept in its then flat state by storing it where it will be subjected to a certain amount of pressure. One or two other hints may perhaps forestall any difficulties which may be found in this process. One is that negatives which may have been handled with greasy fingers should be first cleaned up by rubbing over the surface with benzine applied with a tuft of cotton. Negatives which have not been treated too heavily with retouching-medium will strip readily, and some experience with existing negatives will show what amount of retouching they may carry without leading to difficulties in stripping or necessitating the removal of the retouching before the process. In the event of negatives being required for further prints, the film-negative can, of course, be supported in the printing-frame like one on celluloid film; whereas, if it has been necessary to remove the retouching-medium (calling for further retouching) the negative will require to be soaked in a one per cent. or two per cent. solution of glycerine before being squeegeed down upon a glass plate which has been flowed over with a weak solution of gum, this coating serving to hold the film to the glass, and thus making it practicable to carry out any retouching-work which could not be done readily upon the negative in its film condition.

The British Journal.

DRILL yourself in the school of "seeing" and you will have no trouble to steer clear of the sin of copying, which, besides being unfair to the other fellow, is really very unsatisfactory to yourself, in the long run.—*C. W. Christiansen.*

EDITORIAL

The Value of a Gift-Photograph

AMONG the many sources of satisfaction that accrue to the amateur photographer is his ability to distribute occasionally, among his friends, pictorial photographs representing his individual artistic skill. If he wishes to make a present of a particularly successful print—supposedly in the form of an enlargement—he will have it framed suitably and indicate, in some way, that it will not be duplicated. Thus, the gift assumes at once a distinctive character and, in the eyes of the recipient, is a gift that surpasses in interest and value any photograph that may be purchased in an art-store. There are cases where a beautiful original photograph —particularly, if produced in carbon, gum or bromoil—is valued by its owner more highly than a costly oil-painting. There can be no doubt of the justice of such an appraisement, if the photograph were a multiple gum-print by Garo or a similarly skilled artist. The case is not much different from that of a reputable painter. He has his original sketch made of some charming landscape, and from this he produces the picture which is sent to the art-dealer, who displays and finally sells it. Were the artist to paint a second picture from the original sketch, the art-dealer might decline to accept it on the ground that he does not sell duplicates. Painters of high rank rarely paint two pictures of exactly the same subject, and the purchaser of a masterpiece rightly assumes that it is the only one in existence of that particular artist. However, there are many painters that have duplicated their subjects. Gilbert Stuart is known to have painted no less than forty duplicates of his famous portrait of George Washington—the original of which is now in the Boston Museum of Fine Arts—with scarcely a perceptible variation in characterization and artistic execution. These he sold at one hundred dollars each, thereby commercializing his noble art, and giving them a permanent speculative value.

In the case of the amateur photographer, it would seem desirable that he distribute as few duplicates as possible of any one subject. The bride who finds among her wedding-presents an original and tastefully framed photographic print will prize it all the more if she knows that a replica does not exist—at least in a home that she is likely to visit. The same is true of any discriminating art-lover who receives, as an important gift, a beautiful and original photograph intended to grace the walls of his home. The moment he discovers a replica of his picture in the office or home of another, his own prized picture loses its full value, and the sentiment associated with it diminishes. The wise amateur will keep a careful record of his distributions, so that they may not conflict in the manner described. A photographic print on which the artist has expended much enthusiastic effort, and which reflects his individual invention and artistic expression, deserves a nobler fate than that of the commercial product. It is worthy of the honor and distinction enjoyed by any genuine work of art.

The Danger of Lowering the Standard

THE necessity to curtail the consumption of food, fuel and light in every way possible, has been impressed forcibly upon every man, woman and child of this nation. In many respects this change in our daily lives has proved of undoubted benefit. There are many, too, who have practiced economy in the use of manufactured products, using cheaper materials and lowering the quality, but maintaining, if not increasing, the retail selling-price. The consumer did not demur, but accepted the greatly inferior product as a matter of course. He probably thought that, with the return to normal conditions, the quality would be improved until the former high standard had been restored. But that was not the purpose of the manufacturer. There are instances where this selfish idea was only too evident. Take, for instance, the high-class publications in the magazine-field. How many of them have deteriorated because of the conditions of the war? Most of them have maintained their high technical standard, because their publishers considered it a duty they owed to their subscribers and advertisers. Others, who were not so prudent, have lost not only in prestige, but in subscriptions and advertising. If all publishers, feeling the pinch of hard times, had yielded to the temptation to cheapen their product, that would have been different. Many of them reduced the bulk, but maintained quality and excellence.

XUM

ADVANCED COMPETITION

Closing the last day of every month
Address all prints to PHOTO-ERA, Advanced Competition
367 Boylston Street, Boston, U. S. A.

Prizes

First Prize: Value $10.00.
Second Prize: Value $5.00.
Third Prize: Value $2.50.

Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

Prizes may be chosen by the winner, and will be awarded in photographic materials sold by any dealer or manufacturer who advertises in PHOTO-ERA, or in books. If preferred, the winner of a first prize may have a solid silver cup, of artistic design, suitably engraved.

Certificates of award, printed on parchment-paper, signed by the Publisher, and suitable for framing, will be sent on request, and free of charge, to winners of prizes or Honorable Mention.

Rules

1. This competition is free and open to photographers of ability and in good standing—amateur or professional.

2. As many prints as desired, may be entered, ***but they must represent, throughout, the personal, unaided work of competitors. Remember that subjects which have appeared in other publications are not eligible, nor may duplicate prints be sold, or entered in competition elsewhere, before Photo-Era awards are announced.*** Prints on rough or linen-finish surface are not suitable for reproduction, and should be accompanied by smooth prints on P. O. P., or developing-paper having the same gradations and detail. All prints should be mounted on stiff boards.

3. *Unsuccessful prints will be returned only when return-postage at the rate of one cent for each two ounces or fraction is sent with the data.*

4. *Each print entered must bear the maker's name and address, the title of the picture and name and month of competition, and should be accompanied by a letter,* SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print exactly for what competition it is intended.***

5. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA, unless otherwise requested by the contestant. However, this does not prevent the photographer from disposing of other prints from such negatives after he shall have received official recognition.

6. Competitors are requested not to send prints whose mounts exceed about 11 x 14 inches, unless they are packed with *double thicknesses of* ***stiff*** *corrugated board, not the flexible kind—or with thin wood-veneer.* Large packages may be sent by express.

7. Competitors who have won three first prizes within a twelve-month, become ineligible for two years thereafter. The too frequent capture of the first prize by one and the same competitor tends to discourage other participants and to make the competitions appear one-sided and monotonous.

Awards—Indoor-Genres
Closed December 31, 1918

First Prize: George W. French.
Second Prize: Mrs. Charles S. Hayden.
Third Prize: Maude Paget.

Honorable Mention: H. H. Bauck, Alec Blackie, Dr. A. H. Cordier, Mrs. William Durrant, Louis A. Dyar, W. E. Fowler, Lilian A. Guernsey, Dr. McMorris Houston, C. A. Major, Juan J. Moreno, E. M. Pratt, Harry G. Phister, Myra D. Scales, C. D. Shotton, James Thomson, Hart L. Weaver, Leopold Zwarg.

Subjects for Competition—1919

"Still-Life." Closes February 28.
"The Spirit of Winter." Closes March 31.
"Rainy-Day Pictures." Closes April 30.
"The Spirit of Spring." Closes June 30.
"Miscellaneous." Closes May 31.
"Rural Scenes." Closes July 31.
"Shore-Scenes." Closes August 31.
"Outdoor-Genres." Closes September 30.
"Architectural Subjects." Closes October 31.
"Domestic Pets." Closes November 30.
"Indoor-Genres." Closes December 31.

1920

"The Spirit of Christmas." Closes January 31.

Photo-Era Prize-Cup

IN deference to the wishes of prize-winners, the Publisher will give them the choice of photographic supplies to the full amount of the First Prize ($10.00), or a solid silver cup, of artistic and original design, suitably inscribed, as shown in the accompanying illustration.

Substitutes for R. & P. Shutter-Teats

PHOTOGRAPHERS in the U. S. have been unable during the last two years to obtain repairs for Thornton-Picard shutters, the soft rubber accessories of which have in most cases become hardened and useless. While the ordinary bulbs and tubing of the shops could be employed, inability to procure the little rubber teats which lift the releasing lever disabled most of these shutters. Some months ago, the writer hit upon the idea of using the small soft rubber bulbs from ordinary medicine droppers as a substitute.

McMORRIS HOUSTON, M.D.

FIRST PRIZE
INDOOR-GENRES

BENDING TO THE TASK — GEORGE W. FRENCH

Advanced Competition—Rainy-Day Pictures Closes April 30, 1919

THE camerist who decided for one reason or another that the Spirit of Winter competition demanded too much physical discomfort in our northern climes can now make up for lost time. Weather-conditions for rainy-day pictures may demand an umbrella, raincoat and overshoes; but it cannot be asserted that they cause very serious physical discomfort. Properly equipped as to clothing and protection for his equipment, the camerist may set out on a rainy day and obtain pictures of remarkable technical and artistic interest. The ambitious worker will welcome the opportunity to match his wits against the vagaries of the weather. If he has been fairly successful with his snow-pictures, he will find that in the present competition his previous experience will avail him little. The problem may be the same in principle, but it is very different in practice. However, in this very diversity of subjects and problems the truly ambitious camerist finds an added incentive and pleasure.

It is obvious that a rainy-day picture is one made in the rain or under weather-conditions of heavy mist or fog. Whether in the city, country or at the sea-shore, beautiful and unusual effects may be obtained by the skilled and observant camerist. Of first importance is the adequate protection of the photo-equipment from moisture, as the lens, shutter, bellows and all metal parts of a camera may be ruined if exposed too long to inclement weather. Particular care should be taken if pictures are made on or near salt-water. The ordinary hand-camera enables the camerist to make exposures with comparative ease from beneath an umbrella, raincoat or tarpaulin. With regard to the larger cameras on a tripod, more elaborate protection must be improvised to suit each individual subject. Often, exposures may be made from a house, barn, pier or tent. So long as the camera is protected effectually, the means employed is virtually immaterial and is governed entirely by the resourcefulness of the camerist. A lens-cap is indispensable, particularly if exposures are to be made near salt-water. Flying spray is a source of danger to the lens, unless due precautions are taken immediately before and after releasing the shutter.

It is about time that camerists in general, and those who enter this competition in particular, should en-

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deavor to consign the wet-pavement-man-with-umbrella rainy-day picture to oblivion. It is all very well to call attention to the interesting reflections; but the fact remains that this theme has been very much overworked and will find small favor with the jury. However—as in all our competitions—if the exceptional comes to pass, even if it is of hackneyed origin, send it along by all means. Our jury may appear to be extremely hard to please; but after all, it is human and it admires any work that is original and the result of careful thought, no matter how time-worn its theme.

Beautiful pictorial effects may be obtained along riverbanks, the shores of lakes and the seacoast. Often, ships at anchor add immensely to the general effect because of the reflections their spars and sails cast on the water. Docks, piers and landings offer other suitable subjects. Ferry-slips, showing a ferry arriving or departing crowded with commuters on their way to work, has many possibilities. The old adage that fish bite better on a rainy day might be expressed pictorially by the lone fisherman in his flat-bottomed boat "waiting for 'em to rise." This subject was suggested a year ago, but no camerist has attempted it as far as the pictures in these competitions are concerned. Is there not some camerist who can make this popular belief live pictorially?

A rainy day in the mountains is one that the intelligent camerist should utilize to his advantage. The cloud-effects obtainable in the valleys and uplands, with here and there a rift in the clouds to heighten the effect, is material enough for a day's camera-work. Moreover, a mountain-lake is an excellent accessory if one can be found to fit suitably into the composition. It is essential that there be no doubt that it is wet weather. To portray distant hills shrouded in mist must be done carefully lest it appear that the hills are merely hidden by an early morning-fog. A bit of road dotted with mud-puddles; a farmer trudging along, protecting himself as best he can from the rain; a horse and buggy splashing along with rain beating down on the raised top—in fact, any person or object that is receiving a wetting, should be employed whenever possible to make the rainy-day picture truly convincing.

Bits of farm-life, in the course of a rainy day, offer excellent subjects. On most farms there are certain "chores" that are done when weather-conditions make work in the fields impossible. Chopping wood; sharpening scythe-blades, axes, sickles, etc.; mending harness; greasing axles and other work that is usually done in an open shed or near an open barn-door may be photographed with enough foreground to prove that it is raining outside. The observant camerist will find many other appropriate subjects in and around the farm. Not only is he in a position to obtain a good rainy-day subject, but he may chance upon an indoor-genre that will prove to be a masterpiece.

Photographing through a store-window is a feasible and comfortable way to obtain many excellent subjects. Passersby who linger a moment to look into the window make good subjects if they are selected with care. Street-scenes with traffic may also be obtained in this manner. This method has the advantage that the camera is well protected. Slight diffusion may be caused by the plate-glass window; but on a rainy day most objects are slightly diffused and this is no serious drawback. However, diffusion and distortion are not the same thing, and care should be taken to see that the thickness of the plate-glass window does not distort the subject.

Those camerists who are equipped with small pocket-cameras are in a position to obtain many original rainy-day pictures from automobiles, street-cars, motor-busses or wagons that are moving along with traffic. From such points of vantage it is possible to catch many bits of city-life that are beyond the reach of the camerist on the sidewalk. Moreover, city-traffic is a study in itself and particularly so in inclement weather. I have in mind one trip I made on a Fifth Avenue motor-bus from Washington Square to Grant's Tomb, Riverside Drive, New York City. At the time, I lived up-town and on the day in question the rain fell in torrents. To avoid a long walk cross-town, I boarded the motor-bus. For nearly three-quarters of an hour I rode along and literally passed hundreds of rainy-day subjects—but without my camera. At every stop the small group of passengers standing in the downpour, ready to board the motor-bus made as many different subjects as the number of streets that we passed. Then, again, when the motor-bus waited at cross-streets to let traffic pass, the pedestrians in their raincoats and with upraised umbrellas would hurry by in an effort to reach the opposite side of the street. Incidentally, the traffic policemen offered many excellent subjects, clad as they were in rubber-coats and boots that shone in the drenching rain. Taken all in all, I missed an exceptional opportunity; and, yet, one that is not beyond the reach of any camerist in New York or other large city.

Since this is the second competition, "Rainy-Day Pictures" of recent years, we believe that there will be unusual activity shown to send in pictures of originality, good composition and technical excellence. Modern high-speed lenses enable the camerist to undertake rainy-day subjects with greater certainty of success than ever before. One has but to note the marvelous effects obtained in present-day motion-picture photography. Virtually no weather-condition prevents the motion-picture camera-man from obtaining technically and artistically excellent results. This success is due solely to the modern high-speed anastigmat lens. However, even those camerists who still use the older types of lenses need not hesitate to make the attempt, for there are rainy-day subjects well within reach of their lenses. The judges are well acquainted with the difficulties involved and these will be taken into due consideration. The last rainy-day competition was a pronounced success and the judges were hard put to select the prize-winners. There is no reason why this present competition should not exceed the former in popularity and photographic benefit to all concerned.

A. H. B.

Red Tones on Printing-Out Paper

A PLEASING relief from the sepia and black tones which now dominate the showcase may be obtained by using matte printing-out paper toned to a red tint. The color, although not actually that of a red-carbon, is distinct from the brown and purple tones usually obtained by gold-toning. The process used is simple and differs in no way from the separate toning and fixing with which we are all familiar; in fact, by prolonging the toning, very pleasing browns may be obtained. Glossy paper may be used, but is not so satisfactory as a rule as the matte variety. The phosphate toning-bath is recommended, and is made as follows: Phosphate of soda, 30 grains; water, 10 ozs.; chloride of gold, 1 grain. The prints are washed as usual until the milkiness disappears—four changes of water with five minutes' immersion in each are usually sufficient. They are then transferred to the toning-solution, only one

SECOND PRIZE
INDOOR-GENRES

DICKEY BIRD — MRS. CHARLES S. HAYDEN

print being toned at a time. It is a good plan to take one print and place it in a dish of clean water by the toning-bath, while the toning is done, to serve as a guide. As soon as the print in the toning-solution shows a distinct change it is put straight into the hypo-bath, which should not be stronger than two ounces to the pint, and another print toned. The toning takes only a few seconds, and it is impossible to obtain even tones if a number are toned at once. Although there is so small a quantity of gold deposited, the prints stand very well, some now over fifteen years old having shown very little deterioration. It may be well to note that the toning-solution should be made one hour before using, and that it should then be used up, as it does not keep more than a few hours.—*The British Journal.*

Window-Transparencies With Wide Margins

WINDOW-TRANSPARENCIES with wide, clear margins are very desirable for window-decorations. They enable the beholder to enjoy such a photographic positive with great convenience and added pleasure. They are produced easily. For a 5 x 7 negative, for instance, use an 8 x 10 printing-frame, into which fit, closely, a sheet of 8 x 10 heavy, clean glass. On this, place a paper-mat with an opening slightly smaller than the 5 x 7 negative, and fasten by means of paper-strips to the negative, the latter with film-side up. On top of this place the 8 x 10 transparency-plate, face down, and very carefully attach the back of the printing-frame. After development and fixation, you will have the transparency (contact) positive of the 5 x 7 negative with clear-cut edges and wide margins. If these margins are not satisfactory, as regards width or uniformity, they can be cut down very easily with a diamond glass-cutter. Naturally, the transparency should be backed with a piece of ground-glass of corresponding size, and then bound together by means of adhesive tape or, as some prefer, placed into a wooden frame of very narrow molding. If a ground-glass is not easily procurable, and one desires to practice economy, the transparency may be backed with a clear piece of glass of corresponding size, interposed by a piece of fine, white tissue paper without wrinkles or other defects.

W. A. F.

An Easy Method to Convert Metric Formulæ

DESPITE the fact that the metric system of weights and measures has many advocates in the world of science, most amateur and professional photographers

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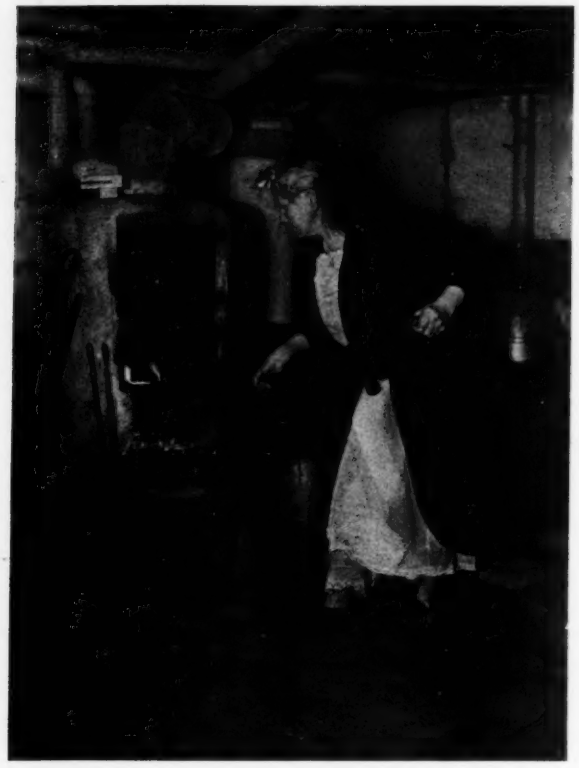
THIRD PRIZE
INDOOR-GENRES



CARRYING ON — MAUDE PAGET

still cling to grains and ounces instead of to minims and liters. A writer, L. T. W., in *The British Journal*, calls attention to his method to convert metric formulæ to the more familiar English system of grains and ounces. Although there are several methods of conversion in use, this writer believes that they are too complicated in most cases for the average camerist to work out easily. L. T. W.'s plan is "to reckon the 1,000 c.c.s. as 16 ozs. and multiply all the gm. quantities by 7, which plan will give the number of *grains* per 16 ozs. of solution, there being no real reason why the 1,000 c.c.s. should be reckoned as a pint of 20 ozs., as many appear to imagine; for as a matter of fact a litre is 35 ozs. and 94 minims."

"As an illustration of this 'rule of seven' plan the one-solution scalol-hydroquinone developer may be taken:

Water	1,000	c.c.s.	=	16	ozs.
Soda Sulphite Crystals	50	gm. × 7 =		350	grs.
Scalol	2.5	gm. × 7 =		17½	grs.
Hydroquinone	4.5	gm. × 7 =		31½	grs.
Soda Carbonate Crystals	75	gm. × 7 =		525	grs.
Potassium Bromide	5	gm. × 7 =		3½	grs.

Sixteen, eight or four ozs. are quite as convenient as the more popular twenty, ten and five-oz. quantities. If, however, the worker prefers the 20-oz. lots to the 16 ozs. given by the above system, the multiplying by seven can still be carried out, and when the figures are obtained they are simply divided by four, which gives the 4-oz. quantities, they being then multiplied by five to produce the quantities per pint."

Washing in Cold Weather

It is known that it takes longer to wash the hypo from a film of gelatine at a low temperature than at a high one. In summer-time, when the temperature of the water used for negative and print-washing is twenty or thirty degrees higher than it is in winter, the gelatine is in a condition that is altogether more porous and soft, and gives up any soluble matter in it more freely. With albumen and collodion as vehicles, it was sometimes suggested that the washing after fixing should be carried out with hot water, as this very much curtailed the operation: with gelatine this is not good.

It is well to bear in mind, however, that if warmth facilitates the washing, coldness delays it; and so, to obtain the same assurance of permanence, special attention should be given in cold weather, to make sure that the operation is complete. If there is any doubt on the point, the water draining from print or plate should be tested for hypo, by permanganate.—C. L. Fitch, in *The Amateur Photographer*.

THE CRUCIBLE

A MONTHLY DIGEST OF PHOTOGRAPHIC FACTS

With Reviews of Foreign Magazines, Progress and Investigation

Edited by A. H. BEARDSLEY

Sensitiveness of Plates While in Solutions

It is well-known that dryplates become less sensitive as soon as they are submerged in the developing-solution, and for that reason, when handled under the regular darkroom-light, permit greater freedom than is the case when they are handled in a dry state, under similar conditions. Therefore, the worker need have no anxiety that the plates will be fogged when he takes them from the developing-solution for the purpose of examination. Of course, we have to take into account the special color-sensitiveness of the plate. The Lumière Brothers have investigated the change of light-sensitiveness of plates while submerged in water, but they do not give definite figures. The loss of sensitiveness of plates, while lying in water, naturally depends upon the character of the emulsion. The decline of sensitiveness is affected little in the case of one and the same plate in the various spectral regions, but it seems to assert itself more strongly in the yellow and green. Plates that have lain in water regain their former normal sensitiveness after they have been dried.

There are times when the worker does—after having color-sensitized his plates—like to expose them in the camera while they are still moist. On the one side, there is the desire to economize in time; on the other, there may be the lack of a suitable drying-room, although too prolonged drying would be likely to affect the quality of the film.

While exposing damp or moist plates, one should consider not only the above-mentioned change of sensitiveness, but the fact that the definition of the image will be seriously impaired on account of the swollen state of the emulsion. Or the exposed plate would suffer by loss of definition on account of the swollen state of the gelatine-film.

Strip-Printing

The method of printing bromides in strips, either "three on" or "six on," is becoming more popular than ever both for postcards and larger work. This month we propose to offer a friendly criticism of some of the methods of working that have come under our observation. The chief trouble seems to be to get all the images the same depth, and we think that in most cases it is not the fault of the assistant, but of the method. The exposing light may be so powerful that the exposure necessary is only a fraction of a second, and it becomes an easy matter to make a fifty per cent or even a hundred per cent error. The light should be screened down, or a lower candle-power light used, so that at least two or three seconds' exposure is required. The extra time so occupied would be saved by the absence of "repeats," and better all around work would result. In counting seconds, it is better to count quickly—one-two-three-four, ONE—one-two-three-four, TWO—and so on. A loud-ticking clock will serve as an accurate guide.

Another defect often encountered is the incorrect placing of a vignetted head on postcard-strips, with the result that on trimming, the head is on one side of the card. To prevent this, it is a good plan to get a waste postcard, exactly 5½ x 3½, and cut out an oval opening about 3½ x 2¼ in the center or a little higher. When adjusting the negative in the carrier, the cut-out postcard is placed on it, care being taken to see that the card is in the correct first "feed" mark.

Another trouble is "air-bells" in development or fixing. The chances to get these in development can be reduced to a minimum by placing the strips in the developer in pairs, back to back. We have seen many skilful assistants work this way, using the right hand to pair them, and the left hand to place them in the developer and turn them over. Up to a dozen pairs can be handled in this way, care being taken to keep them in the order in which they go into the developer and to use a plenty of solution. With the finger and thumb, it is an easy matter to pick out the bottom pair, place it at the top, and so on, removing the pairs one by one as they become fully developed. When thrown in the fixing-bath, an assistant should at once part the pairs and immerse them fully, afterwards keeping them on the move. It is true that perfect fixation is more important than thorough washing, and it is equally true that the first minute of a print's immersion in the fixing-bath is the most important, and the fixing-solution should have free access to both back and front of the print.—*Rajar, Limited.*

Strong Lantern-Slides from Thin Negatives

Sometimes a negative is too thin to yield a satisfactory lantern-slide by the usually accepted methods. The following means to obtain greatly increased contrast is well worth trying. The lantern-slide plate should be given a very full exposure and very thorough development, so that the lantern-slide is rather dense and black. Provided a developer that does not stain is being used, there need be no fear of over-development. The lantern-slide plate is then fixed and washed thoroughly, and finally reduced with a ferricyanide and hypo-reducer until the highlights are as they should be in a good lantern-slide. If the manipulations have been carried out carefully, the finished lantern-slide should have a plenty of contrast, and it may be washed and dried with every assurance of giving satisfaction on the screen.

The Radioprint

In the photographic department at King's College Hospital the other day we saw something in the nature of a *tour de force* in photography. This was a life-size X-ray picture of the human skeleton, made direct on to sensitized paper, without the intervention of a plate, at one exposure. The exposure lasted fifteen minutes, and the subject was eight feet away from the tube. We were told that it is intended to carry out the experiment on the living subject as soon as some member of the hospital staff is found who has the patience to stand still for a quarter of an hour. The radioprint, as these direct impressions upon paper are called, to distinguish them from the X-ray negatives made on glass or celluloid, and generally intended to be printed subsequently, is coming into favor among radiographers.—*The Amateur Photographer.*

XUM

BEGINNERS' COMPETITION

Closing the last day of every month
Address all prints to PHOTO-ERA, Beginners' Competition
367 Boylston Street, Boston, Mass. U. S. A.

Prizes

First Prize: Value, $2.50.
Second Prize: Value. $1.50.

Honorable Mention: Those whose work is deemed worthy of reproduction with the prize-winning pictures, or in later issues, will be given Honorable Mention.

Certificates of award, printed on parchment-paper, signed by the Publisher, and suitable for framing, will be sent on request, and free of charge, to winners of prizes or Honorable Mention.

Subject for each contest is ***"Miscellaneous"***; but original themes are preferred.

Prizes, chosen by the winner, will be awarded in photographic materials, sold by any dealer or manufacturer who advertises in PHOTO-ERA, or in books.

Rules

1. This competition is open only to beginners of not more than ***two*** years' practical camera-activity, and whose work submitted here, is without any practical help from friend or professional expert. A signed statement to this effect should accompany the data.

2. Workers are eligible so long as they have not won a first prize in this competition. Winners of the first prize automatically drop out permanently, but may enter prints in the Advanced Class at any time.

3. Prints eligible are contact-prints from 2¼ x 3¼ to and including 3½ x 5½ inches, and enlargements up to and including 8 x 10 inches.

4. As many prints as desired, in any medium except blue-print, may be entered, but they must represent the unaided work of the competitor from start to finish, and must be tastefully mounted. ***Subjects which have appeared in other publications are not eligible, nor may duplicate prints be sold, or entered in competition elsewhere, before Photo-Era awards are announced.*** Prints on rough or linen-finish surface paper are not suitable for reproduction, and should be accompanied by smooth prints on P.O.P., or developing-paper having the same gradations and detail.

5. *Unsuccessful prints will be returned only when return-postage at the rate of one cent for each two ounces or fraction is sent with the data.* ***Criticism on request.***

6. Prints receiving prizes or Honorable Mention become the property of PHOTO-ERA, unless otherwise requested by the contestant. However, he may dispose of other prints from such negatives *after* he shall have received official recognition.

7. *Each print entered must bear the maker's name, address, instructions, the title of the picture and the name and month of the competition, and should be accompanied by a letter,* SENT SEPARATELY, *giving full particulars of date, light, plate or film, make, type, and focus of lens, stop used, exposure, developer and printing-process. Enclose return-postage in this letter. Data-blanks will be sent upon request.* ***Be sure to state on the back of every print for what contest it is intended.***

8. Competitors are requested not to send prints whose mounts exceed about 11 x 14 inches, unless they are packed with *double thicknesses of* ***stiff*** *corrugated board—not the flexible kind, or with thin wood-veneer.* Large packages may be sent by express.

Awards—Beginners' Competition
Closed December 31, 1918

No prizes awarded.

Voices of Nature and the Camera

THE mentality of the average person is susceptible to the beauties of nature in their entirety, much as a music-lover enjoys the massed effect of an orchestra composed of many instruments. However, how many persons are impressed by the solitary pine on the crest of the mountain, or by the deep-toned mellowness of the viola in a string-quartet? How many in a skating-party stop to admire the magnificent sunset as the shadows lengthen across the pond, or how many in a coasting-party note the steel-blue of the evergreens against the snow?

My point is that many of us are aware of *effects* of beauty in nature, but we do not get beyond a sort of subconscious pleasure that in no way arrests our attention or prevents our being keenly alive to the sociability of our friends. A young man goes canoeing with a party of friends and, perchance, sits down at a luncheon to be shared with his companions in a grove near the edge of the stream. All notice the bits of landscape, the water and the sparkling sunlight; but so engrossed are they in their own merriment and conversation that a pond-lily at the side of the canoe or the cry of a kingfisher creates but an impression that is dispelled immediately by the next trifling incident. During luncheon in the grove the center of interest is the refreshments, and no heed is given to the delicate flowers that have entered the sacred precincts of the sheltering grove. There is not a doubt that every member of the party is conscious of the beauty of his surroundings; but only as a pleasing effect. The small voices of nature are inaudible because of the merry laughter and lively conversation. True enough, this party of young people did not go canoeing to study nature; they went to have a good time; and, according to present-day interpretations of a good time, they got what they went for. I have no quarrel with those who enjoy canoeing-trips, picnics, sleigh-rides or motor-trips, I like these diversions, too well, myself. My object is to arouse my friends to realize more pleasure out of these very same trips by developing the faculty to see and to hear the small voices of the great out-of-doors.

Some years ago, I spent my vacations regularly with my family in the famous Berkshire Hills of western Massachusetts. No part of the United States surpasses these hills in beauty, for nature has stocked the hills and valleys with all manner of little "wild things"—birds and flowers. We occupied a simple, little frame-cottage on the side of one of these hills and spent our days in the woods and fields. We were *busy* from sunrise to sunset studying and learning to love Nature in all her marvelous expressions of beauty and harmony. At night, we studied the stars, listened to the whip-poor-wills and went to sleep with the night-wind sighing softly through the pines. Into this atmosphere of quiet, composure and contentment came a young lady from New York City who sought rest and recrea-

tion—mostly recreation. At the end of the first day, she remarked that she could not understand how we could spend all summer in such a "dull, uninteresting hole in the woods." I bided my time. One of my "chores" was to go every morning to a nearby farm for milk. Along the short bit of road to the farm, I found many, many things to interest me. There were birds, chipmunks, flowers, and even an old woodchuck waddled across the road occasionally.

Several mornings later, I asked the young lady to go for the milk as I had "other work" to do. At the breakfast-table I inquired if she had observed anything of interest. "No; not a thing," she replied. In a few days I tried the experiment again. "Do you know, there's the cutest little chipmunk down by that old stump," she remarked on that memorable morning, and on subsequent days she saw and heard more of Nature until a new world opened suddenly to her astonished gaze. No longer was my little home in the hills a "dull, uninteresting hole in the woods." To-day, this same young lady is one of the cleverest and most successful amateur nature-photographers that I know. She had "eyes, but she saw not, and ears but she heard not" until that mental awakening within her enabled her to see the delights of nature. Then she turned to the camera as the one and only means to perpetuate the beauties she had learned to understand and to love.

If, for any reason, this young lady had returned to New York City during the days when she walked along the road to the farm and "saw and heard nothing," I am convinced that a love of nature might never have been revealed to her. She needed those mornings *alone* to "find herself"; and eventually she did, much to her personal delight. It takes time to change from a form of mental desuetude to a lively, sympathetic interest in all that we see or hear; but there are comparatively few of us who have not the latent love of nature within us. Once aroused, this love of the woods, hills, birds and flowers almost compels us to use the camera to record permanently the things in nature that appeal to us. For this very reason, the relation between the voices of nature and the camera becomes indissoluble, and beautiful.

It should not be a difficult matter for the intelligent beginner to see readily the wealth of photographic material that is at hand. Even in winter, there are numberless nature-subjects that make an appeal to the heart and to one's artistic sense. The tracks of small animals or birds in the snow, the ice-formations near a brook, the delicate tracery of frost on the window-pane and winter-landscapes offer vast possibilities to the camerist who hears the voices of nature. In summer, the photographic opportunities are legion. Nature is then in the fullness of her attractiveness; and, to us who love her, it seems inconceivable that any person with a camera can be so deaf as to fail to hear one note of the wood thrush's vesper-song or so blind as to overlook the dainty lady's slipper in the moss at the foot of a pine.

It has been proved to my satisfaction that any amateur or professional photographer who has a love of nature gets more out of photography than the person who "sees or hears nothing." Obviously, the fact that a song-sparrow's song arrests my attention does not make me a better photographer; but the fact that I stop to listen draws my attention to the surroundings; and, frequently, I have found myself in a veritable pictorial fairyland. Had I not stepped off the road to listen the better to the song-sparrow, I should have walked by without knowing that such a beautiful woodland dell existed. Moreover, in such a spot there are often flowers of rare beauty, ferns, toad-stools and mosses that may be photographed. The point is, if the camerist has his ears and eyes open, he is in the position of a discoverer, treading along amid new and beautiful scenes that he never knew existed.

It is not necessary that the beginner purchase an expensive photo-equipment. A moderate-priced box-camera and a portrait-attachment—for "close-up" nature-studies—will answer admirably until the beginner has the opportunity to acquire a more pretentious outfit. A tripod is often of service, although the ingenuity of the camerist may enable him to use stones, fences, stumps and other natural resources to attain his object. A ray-filter, particularly in photographing flowers, is of value, although not indispensable at the outset. Gradually, as the beginner develops his keenness of perception and understanding, he will know what equipment meets his requirements best. Although most cameras will answer admirably, there is a distinct advantage in having one that is equipped with a double-bellows extension. This enables the worker to obtain more satisfactory results when photographing flowers, birds'-nests, insects and mineralogical specimens. Cameras with double-bellows extension are not very expensive and repay the camerist many times by their ease of manipulation on nature-subjects. Needless to say, an anastigmat lens is a valuable asset to any photo-equipment and the beginner should work to the end that he obtains one as soon as possible. The advantages of speed, covering-power and definition should not be overlooked. Also, a good shutter is of great help to obtain properly exposed negatives. All in all, the best photo-equipment obtainable is none too good for the really ambitious nature-photographer.

Although I have confined myself to animals, birds and flowers in referring to the voices of nature, I must not omit to call attention to the great variety of insects, to reptiles, to mineralogical studies and to physical geography in general. Once the love of nature is aroused in the camerist, there is virtually no limit to his photographic activities. Whatever branch of nature-photography appeals to him, it will surely yield days, weeks, months and even years of interesting, educational and pleasant study and recreation. The great out-of-doors will no longer be a sealed book. He will have ready access to its pages; and in them he will read great and beautiful truths that will be an unfailing source of happiness and comfort to him.

A. H. B.

Negative-Development in Practice

In spite of all that has been written and said, the *rationale* of development is a sealed book to most of photographers. Some manage to obtain a fair average of good negatives; some believe that they do so, not knowing how much better work is possible; and others frankly regard development as a sort of gamble which on one day gives a batch of thin negatives and on another a batch of dense ones.

To develop plates intelligently we must consider the nature and structure of the film. An ordinary bromide emulsion-film on everyday plates resembles in structure a macadamized road on a microscopic scale, the bits of granite being represented by minute particles of bromide of silver, and the sand or earth between them is represented by the gelatine. When light—such as the image formed by a lens—falls upon such a film a change takes place in the nature of some of the silver-particles; if the action be prolonged, all are changed in their character, while with a very short light-action

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only a thin layer on the surface is affected. When such a plate is immersed in the developing-solution a further change takes place, the exposed particles of bromide of silver being decomposed, the metallic silver remaining embedded in the film while the bromine is absorbed by the developing-solution. We have thus in a negative a thick layer of particles of silver where the light-action has been intense, say a white collar in a portrait, and a thin layer where it has been weak, as in the shadows of the coat.

Now, we have to define a good negative, and this cannot be done by setting up any standard for universal acceptance. The negatives which are satisfactory to one skilled worker would be rejected by another, so that the only practical definition of a perfect negative is that it is one which gives you the kind of print you require, and the art of development consists in being able to produce such negatives with a reasonable degree of certainty. If it were always desirable to utilize the whole of the exposed particles of bromide of silver to form the final image development would become a mechanical operation: all that would be necessary would be to allow the plate to remain in the solution until this was accomplished, but such is rarely the case. To take a portrait as an example, if the whole of the silver-bromide affected by the rays coming from the face is reduced, the deposit will be too dense as compared with that formed by the rays coming from the dark clothing. Therefore, we must arrest the process before this takes place, and the problem is to find out at what stage this has to be done so as to obtain an image which will yield a satisfactory result with the particular medium we choose for printing. The usual way has been to judge the density and gradation of the image by inspection of the plate either by looking through it at the red light, by watching for the appearance of the highlights at the back of the glass, or by watching the progress of development upon the exposed surface. With considerable experience—keeping to the same brand of plates, and a uniform light in the red lamp or window—fair results are obtained; but a better plan is to develop either for a fixed time at a uniform temperature, or to adopt some form of the factorial system proposed by Mr. Watkins.

Plates vary to a great extent in their behavior in the developer. If we take two correctly exposed plates, one of ordinary rapidity and the other an extra-rapid or special-sensitive, we shall find that the former will attain density much more rapidly than the latter, so that it is impossible to develop them together in a tank or dish for the same time; we cannot judge by inspection of the back, for the image on the rapid plate will usually be clearly visible before the slow one shows a trace, although upon fixing it will prove to be far more dense; so that the only safe course is to follow the Watkins' system, and to estimate from the time taken for the image to make its first appearance the total period necessary to give the desired density. As an example, we will take an ordinary portrait-exposure for which we intend to use a pyro-soda developer. The plate is placed in the dish, and, at the moment of pouring on the solution, we commence counting seconds until we can clearly see the outline of the figure. Let us now assume that Watkins suggests a factor of eight for this developer. Therefore we give a total of eight times this number of seconds, or, to put it into actual times, if the image appears in forty-five seconds, a certain density will be attained and if upon fixing this density is approved of, similar plates may be developed for the same time and will be uniform in density, provided that the strength of the solution and the temperature remains reasonably constant. If greater density be required, a longer factor—say, ten or twelve—is taken; if thinner negatives are required a shorter one—say six.

The greatest mistake that can be made in developing is to curtail the development of an overexposed plate and to prolong it for an underexposed one. In each case exactly the contrary effect to what is desired is produced. Overexposure gives softness, so does short development; the two combined yield a flat, foggy image, in which the highlights are little thicker than the shadow-detail. If, however, the developer were allowed to reduce virtually all the silver acted on by light, the negative would be thick and muddy-looking, but the highlights would be dense and the shadows could be cleared with the ferricyanide reducer. In the case of the underexposed plate long development has the same effect on the highlights, but there is little or nothing to develop in the shadows, so that when we come to print we have nothing but "soot and whitewash." The great thing to remember is that development starts from the surface and that a thin image is quickly formed. With the overexposed negative this gets thicker all over to a certain degree, but if sufficient time be given the maximum of contrast is obtained; with the underexposed one development should be stopped before the highlights become too dense, and if the time system of development be adopted a good average result will be obtained in both cases. We once tried the experiment of exposing a spool of film on various subjects, purposely giving over- and under-exposures, and handed it to an expert in tank-development. As we anticipated, every exposure yielded a printable negative; the overexposed ones were thick and would have been slow printers, but upon reduction they appeared quite normal.

Too much importance cannot be attached to the two important factors of temperature and strength of developer. Tank-solutions are weaker than those used for dish-development, and cannot be used so long, although the latter, being more exposed to the air, are more liable to oxidize, while it is obvious that a developer made with warm water will cool quickly during development unless some precaution is taken to prevent it.—*The British Journal.*

Postcard Variations

THERE are so many variations which can be made in the production of photographic postcards that it is curious how seldom, comparatively speaking, one comes across any that are not just the usual thing. The card is laid in the frame, a postcard-size card on a postcard-size plate, and what is on the negative is allowed to print how it will, with no greater finish to its edges than the irregularity which follows from the woodwork of the frame casting a shadow.

Take the simplest variation of all, which is easiest made with a film-negative. That part of the entire negative which is to show in the picture is carefully marked off, and the negative itself is trimmed down to that with a sharp knife and a suitable guide. The negative so cut down is laid on a piece of glass, the card is carefully adjusted in position and the print made. This gives us a picture with a dark margin.

If we rule four fairly wide lines with a ruling-pen and india-ink on the negative to mark what is to be included, and take care in cutting to cut each line exactly in half, we shall have the dark margin of the picture separated from the picture itself by a white line, which has a very neat effect.

For work of this kind—in fact, for work with paper or cards that are cut to size and are not going to be

trimmed afterwards—it is most important to use a printing-frame which is a size larger than the paper. If we do not, we cannot fail to get defective edges. This frame is filled with a piece of perfectly clean glass, and the negative is laid on that. In adjusting a film-negative that has been trimmed down, as just suggested, on to the card, it will be found easiest to put the card face upwards on the back of the frame, to arrange the negative on it, and then to bring down the glass on top of that, holding all together and putting them into the frame.

Instead of the picture having a regular edge of the kind that has just been mentioned, we may give it an informal or irregular one: not, of course, mere haphazard, but which will look haphazard and yet have been thought out carefully to suit the subject. Having printed the cards, which in this case may be on bromide or gaslight paper, when they are quite dry all those parts of the image which are not to appear are carefully painted out with a reducing-solution. The ordinary ferricyanide and hypo, which should be fairly strong, will do, applying it with a brush mounted in a quill, so as to avoid the use of metal. The image should disappear immediately under the brush, and when the work has been done, the card should be washed, placed in clean hypo for a minute or so, and then well washed again.

Another way to get a good effect is to make an enlargement on glossy bromide paper, mount it carefully in the American or multiple fashion, letter the title on the mount neatly, and then make a postcard-size negative of the whole thing.

W. I. Beckett, in *The Amateur Photographer.*

A Simple and Comfortable Shoulder-Strap

Finding that the leather shoulder-strap provided to carry my 3¼ x 5½ camera rather cut into the flesh, I cast about for something softer to take its place. As a soldier's pack is supported by webbing, I concluded that material similar to that would be best, and this I found in an old belt; the transformation of belt into a carrying-strap being very simple. From choice, the belt should be as dark as possible in color and free of design, made of webbing, and possessing the "snake" type of fastening. All the "making" that is necessary is to substitute the ringed piece of metal that is at one end of the belt by another "snake" piece, firmly sewn on. We have now a "snake" at each end, which hooks into the ring on each side of the camera case and the shoulder-strap is complete, the length of it being regulated by the slide on the belt. Should the only belts available be of a particularly vivid hue, to wear the gray side outwards and the offending colors inwards would overcome any objection on that score.—L. A., in *A. P. and P.*

Why My Photographs Are Bad

Under this title, a copiously illustrated 8vo book, by Charles M. Taylor, was published several years ago. It describes and illustrates eighteen common errors in technique committed by beginners or careless workers. Any one would think that errors such as making a building appear to be falling over; a horse having a head several times normal size; a lake with the water-line running violently uphill, or *two* pictures made on *one* exposure would be things of the past. But no! Such ludicrous mistakes are committed very frequently at the present time, and Mr. Taylor's book shows how they can be avoided, and, in addition, contains twelve full-page pictures that the author considers specimens of good photography.

This book has been virtually out of print for some time, but Photo-Era has just procured the few remaining cloth-bound copies, and offers them at $1.00 each, to be sent, postpaid, anywhere in the United States. See that your erring camera-friends mend their ways!

"Supplementary Apparatus"

Many photographers are inclined to look with scepticism and disfavor upon the vest-pocket camera; yet there are times when such an instrument is of very real value. The fact that such apparatus is of necessity fitted with a short-focus lens, and will give good definition over many varied planes of distance, has much to commend it on certain occasions. Recently, we were looking at some negatives made with one of these cameras at some local celebrations following the signing of the armistice. The press-camera generally used had broken down, and, almost in despair, the operator borrowed a small vest-pocket camera fitted with a large-aperture anastigmat in a focusing-mount, which was used with great success. In fact, the light at the time was bad, and the lens, which was used at its full aperture *without* stopping down, gave a much greater depth of field than could possibly be obtained with a larger instrument. One of the negatives gave a very good indication of this. The subject was a procession, and the first figures were almost as sharp as those at a greater distance. The only defect was a somewhat disproportionate effect between near and the more distant figures, but upon such matters as this the average member of the public is not critical. It must not be thought that we advocate the vest-pocket camera as a universal instrument in this respect: for general work it is certainly not a competitor with larger apparatus, but in special work it has decided claims; in fact it may be regarded as a supplementary instrument of great value. In proof of this we may give a further instance. A photographer was commissioned to photograph by flashlight the gathering at a public dinner. The usual equipment was taken, and, in addition, a vest-pocket camera, focusing by scale. Just before the exposure was made the tiny camera was focused and put upon the top of the larger instrument, the same flash serving for the two. Little was expected of the small instrument, and it was amazing to find upon development that the small negative was the sharper and certainly the better of the two; and this was the negative from which the final prints—after enlargement—were made. Now that enlarging-methods are in such general use, there is little difficulty, provided the negative is of good quality, to make enlarged prints on bromide of any reasonable size.—*The British Journal.*

At the Photographic Salon

Professional critic (to pictorialist, whose rural picture is marred by uncertain definition, the background being quite dizzy): "I like your bucolic study, but your background is—ahem—beastly."

Pictorialist: "Thanks; and perhaps you think the cattle in the foreground are beastly, too."

Professional critic: "Oh, not at all; they are anything but that."

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OUR CONTRIBUTING CRITICS

YOUR CRITICISM IS INVITED

Whoever sends the best criticism (not over 150 words) before the twentieth of the current month, will receive from us, postpaid, a copy of "Pictorial Landscape Photography" by Paul Lewis Anderson, price $1.50.

ANYONE who has done his bit at home-portraiture, appreciates the difficulties in subjects of such extreme contrast. "In Cassock and Cotta" is a hard subject rather poorly handled.

The picture-space is nicely filled, the boy well placed and carrying his part well. The wall makes an excellent background. All good points. But, why so close to the background? A short step out from the wall would not have made such objectionable shadows, even with the flashlight which was evidently used, and the sense of roundness—so sadly lacking—greatly improved. The flat lighting and short exposure give the impression that the boy is tacked-out on the wall, which is further emphasized by the weak support below the edge of white. The hands were sacrificed to get texture in the cloth and the effort to save the face from like fate, too apparent. Bringing the subject out from the wall, the light more to one side, longer exposure, and being sparing of carbonate in the developer, would satisfactorily repay for the trouble to try this over again.

ALEXANDER MURRAY.

THIS choir-boy belongs in a church; not up against a wall. He appears confused, worried, uncertain—not a becoming expression for a solo singer. In fact, I cannot believe that this boy is a singer; but rather a self-conscious boy posed in some choir-boy's clothes. The picture is too evidently a flashlight, revealed by the undesirable shadows cast upon the wall, too close behind the figure. The negative was underexposed, as evidenced by the flesh-tones being too dark; especially, the hands, also by the lack of detail in the dark cloth. The placing of the figure in the picture-space is correct, and the general pose of the figure is nearly satisfactory; but the model fails to do the part of a choir-boy. The picture is a failure, because it is not what the photographer aimed to produce.

ARTHUR A. SMITH.

THE proportion of dark and light in this picture of the young chorister is good and so far well planned; it is in the minor details where the faults lie, for in-

THE PICTURE CRITICIZED THIS MONTH

stance—but this is hardly a minor detail—he has no legs! One has the horrible impression that he is being suspended in the air, the tie being so mixed with the shadow on the wall that it might almost be his only means of support. A touch of reflected light would have much improved the drawing. And now for the details proper, the odd little light between the fingers of the right hand gives an impression of one finger missing, the sleeve of that hand, too, needs toning-down. There is not much to recommend the expression of the face, it should have been possible to choose a more kindly moment. The picture in the corner could have been omitted.

MAUDE PAGET.

THE figure needs legs for support; more space is needed between the figure and the right margin; and the contrasts are a little hard. The boy's mouth would be better closed, because as now shown, the boy may be singing; but, perhaps, he is merely breathing through his mouth. It is somewhat difficult to photograph satisfactorily a person singing. The mouth changes its form from instant to instant in singing, and to catch one fixed form of the singing-mouth which shall convey the idea of a singing-mouth is difficult indeed. This photograph is fortunate to represent nothing worse than a breathing-mouth. The exposure should have been increased and the developer diluted to obtain detail in the shadows and keep detail in the highlights. A quarter-inch should be taken from the left margin and added to the right margin.

CLARENCE A. PIERCE.

ONCE I was a choir boy and I recognize the typical chorister in the youngster—unenthusiastic and untrained. On the supposition that the photographer desires to suggest church-lighting which, through much diffusion, is flat, I find nothing to criticize in the lighting. However, the print is not a picture, it is marred by lack of action. Get the boy out from the background, head up and chest out and his mouth open as though singing—holding his hymnal up to his new line of vision. The position of his left hand is unnatural—try it yourself, Mr. Reader. The torn hymnal is objectionable as it attracts attention and suggests the home rather than the well-appointed choir. Lastly, trim the print to eliminate the objectionable picture.

H. H. KINGSTON, JR.

Is the boy singing, trying to find the place, or what? If he is singing, he must be doing it through his nose, as his mouth is barely open; and his worried expression seems to indicate that he is hunting the place. When we are through wondering about this the eye jumps to the corner of a picture in the upper left-hand corner. If enough were trimmed off the left side of the print to eliminate the disturbing picture-frame the spacing would also be improved. The lower part of the boy's costume harmonizes so well with the background that he almost looks like a mannikin on a pedestal. The texture of the upper garment is well brought out; but the use of a reflector in front and a little to the left of him might have lightened his face, which appears somewhat dark.

T. R. WILEY.

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OUR ILLUSTRATIONS

WILFRED A. FRENCH

When John Paul Edwards, the eminent photo-pictorialist of Sacramento, perpetuated one of the sterner aspects of the first spring-month, he must have had in mind the poet's words,

"The stormy March has come at last,
With winds and clouds and changing skies";

for it is certainly a vivid portrayal of a tempestuous day, and one that reveals masterly skill in its interpretation. Mr. Edwards' camera-work is known already to Photo-Era readers by several excellent examples—see October and November, 1918 issues of Photo-Era—and words of favorable criticism have appeared in these pages, from time to time. His direct and refined method of expression is always associated with true poetic feeling, so that the beholder forms an intimate relationship with his sympathetic "mood-pictures," that yields an unusual degree of enjoyment and satisfaction. The picture decorates the front-cover and also page 129.

As the initial illustration, proper, the portrait of Jascha Heifetz, the youthful and distinguished violin-virtuoso, claims attention. In the January issue of 1918, Photo-Era presented a picture of another violinist, but apparently engaged in executing an intricate passage, which was designed to illustrate the mastery of the photographer (Garo, of Boston) in managing an extremely difficult pictorial theme. Here we see the musician in repose, an attitude frequently assumed by violinists during a long pause of a performance, and yet, when the same musician faces the camera, he is generally ill at ease and the result is an awkward looking attitude—unless the photographer rises superior to the situation. In the present instance, both artists co-operated and we are favored with a perfectly natural and pleasing composition in the pyramidal form. Mr. Mishkin makes a specialty of musicians' portraits, in which branch of photography he has attained an enviable reputation. Data: professional studio; December, 5.30 P.M.; Dallmeyer portrait-lens; Cooper Hewitt light; 2½ seconds; 8 x 10 plate; contact glossy print.

As was explained at the time, one of the pictures belonging to Mr. Kales' review of the Los Angeles Salon—printed in February Photo-Era—was obliged to be omitted, for lack of space. It will be found on page 116. It is an uncommon camera-theme, an Indian woman standing near an open window of her home. The artist, Forman Hanna, has his home in Globe, Arizona, and has frequent and exceptional opportunities to picture Indians in their native surroundings. He has a predilection for soft-focus lenses, and his work is marked by a diffusion of outline that is at once rational and pleasing. The window with its interesting model is placed judiciously in this artistically balanced picture. Data: June, 9 A.M.; bright light; camera, R. B. Graflex; size, 3¼ x 4¼; lens, Protar; 7½-inch focus; stop, F/6.3; exposure, 1/40 second; Premo film-pack; pyro developer in tank; enlarged on Royal bromide untoned.

Photo-Era has published a picture by Harold A. Taylor, of the Pacific Coast, about once every year. The subject, however, which found immediate favor wherever Photo-Era was seen, appeared in Photo-Era of July, 1917—an extremely realistic and beautiful picture of a breaking wave. The present example of Mr. Taylor's work is a subject that is typical of the lower California Coast. The beach, laved by the waters of the Pacific, is famous for its smooth expanse, backed by low-rising ground dotted, here and there, with a hardy, twisted pine, as pictured graphically by Mr. Taylor, on page 117.

As a photographer of outdoor-subjects, Allen E. Churchill has demonstrated in these pages artistic power and versatile resourcefulness in the highest degree. Street-scenes, in particular, appeal to his discriminating judgment, and we find him as successful in the depth of winter as in the middle of summer. Everyone will appreciate the uncommon beauty and variety of his pictorial contributions, the leading picture, page 118, revealing much originality in selection. The merely technical side of his work merits the highest praise. Data:

"Calm and Serene After the Storm," Madison Square, New York; page 118; January, about noon; bright sun; 3¼ x 4¼ Graflex; 4¾-inch Zeiss Tessar, F/4.5; at F/11; 1/30 second; Standard Orthonon (backed); Dianol-Sulphite; 6½ x 8½ Azo F Hard enlargement.

"Sunshine and Shadow"; Central Park, New York; page 119; December, 4.30 P.M.; bright sun; camera and lens same as preceding; stop, F/16; W. & W. color-screen; 1/10 second; Cramer Medium Iso; developer and print same as preceding.

"Snow-Bound," Bronx Park, New York; page 119; February, 11 A.M.; bright sun; 5 x 7 tripod-camera; 9½-inch Zeiss Protar; at F/32; ½ to ¾ second; Seed Ortho, Double-coated; A, B, C pyro-soda; print as preceding.

"Draped in Winter-Beauty," Madison Square Park, New York; page 120; December, 9.30 A.M.; bright and hazy; camera, lens and stop as first picture; 1/25 second; Cramer Medium Iso, backed; A, B, C pyro-soda; 5 x 7 Cyko Soft.

"Toilers facing the Blizzard," southern end of Madison Square Park, page 121; December, 8 A.M.; dull day; 4 x 5 Graflex; 7-inch Zeiss Tessar; at F/8; 1/40 second; Seed 30; A, B, C pyro-soda; 5 x 7 print, Azo F Hard.

"Equitable Building, after Fire," New York City; page 121; January, 11.30 A.M.; bright sun; 3¼ x 4¼ Graflex; 4¾-inch Zeiss Tessar; at F/11; 1/40 second; Standard Ortho (backed); dianol-sulphite; 5 x 7 print, Azo F Hard.

The lithe form of the woman diver *par excellence*, Annette Kellermann, was seen to eminent advantage submerged in a huge glass tank, in the Hippodrome. The series of subaqueous feats performed by this remarkable swimmer was described in connection with a similar picture published in Photo-Era, August, 1917. Miss Kellermann is reported to have remained under water, executing a number of graceful movements, for a period of nearly two minutes. No data have been furnished, except that the exposure was made by flash-light. The lens penetrated—as it were—first, one of the one-inch glass-plates, composing the huge tank, and then the water, before it reached the figure with limbs extended. The clearness of detail and accuracy of delineation are remarkable in the circumstances.

The article, by William S. Davis, on photographing

solar and lunar eclipses—printed in this issue—is the first practical one on an astronomical subject that has appeared in PHOTO-ERA since 1908, showing how little has been done in this fascinating branch of photographic science by workers other than regular astronomical observers. The present article is the more interesting to amateurs because no special or elaborate apparatus was used by Mr. Davis. Data: "Eclipse of the Sun," made at Orient, N. Y.; page 124; June 8, 1918; 6.08 P.M. (sun-time); clear light; 4 x 5 folding view camera; back-combination of 13-inch R. R. lens; stop, F/20, effective; Ingento "A" ray-filter; 2 seconds; Standard Orthonon; M. Q.; ray-filter was smoked over lamp to reduce chance of halation; 3¼ x 3¼ enlarged print. "Partial Eclipse of the Moon"; January 7, 1898; 7.35 P.M.; clear; 4 x 5 home-made camera; back-combination of a 20-inch Ross R. R.; stop, F/56, effective; no color-screen; 3 seconds; Carbutt B 20; hydrochinone; 3¼ x 3¼ print.

The personal charm and grace of the popular comedienne, Louise Groody, has been well expressed by A. E. Johnson, page 126. In this picture, the actress appears as a member of the "Fiddlers Three" company, that had a successful run in Boston, several months ago. The original print had a number of obvious technical defects for which it is not easy to account in the absence of adequate data. Data: camera 11 x 14; Cooke lens; stop, wide open; plate, Standard Polychrome; developer, pyro; contact-print on Artura.

The scene in the National Capitol, shown on page 131, represents President Wilson addressing Congress, December 2, 1918, prior to his departure for Europe. The Democratic side of the House is seen at the left, and the Press-Gallery is just above the Vice-President and Speaker Clark. As was to be expected, every convenience was shown the photographer, as this picture had a special historical significance. The camera appears to have been placed in the gallery, and was directed downwards in order to include as much as possible of the floor of the House, and to bring the chief section of interest in the center of the plate. As flashlight was out of the question, daylight was resorted to, and the result is very satisfactory in view of a necessarily long exposure. The credit for making this important photograph belongs to Mr. A. W. Leonard, who is regularly employed by Harris & Ewing as a news-photographer. Data: December 2, 1918; daylight; 5 x 7 Graphic camera; Wollensak Velostigmat, Series II, F/4.5, used at full opening; exposure, about 3 seconds; 5 x 7 Seed Graflex plate; tray-development, pyro-soda; contact-print on Azo F Hard.

Reference to the war-photographs, pages 132 to 134, will be found in the Editor's review of the War-Prints Competition, page 132. Data:

"American Woman War-Worker," December, 11 A.M.; dull light inside; 4 x 5 Reflex Camera; B. & L. Zeiss Tessar Ic; 7-inch focus; stop, F/5; exposure. about 7 seconds; Seed 30 plate; pyro developer; contact-print Azo F Hard X.

"Leaving for Camp," September; fair light; 3A F. P. K., 3¼ x 5½; Zeiss-Kodak F/6.3; 6½-inch focus; stop, F/6.3; exposure, 1/50 second; Eastman film; Eastman tank-powders; contact-print, Azo F Hard X. "Ready for Service," September, 4.30 P.M.; rest of data same as preceding picture, except tank developed with pyro.

"Children Buying Thrift-Stamps," March, 10.30 A.M.; very bright; 5 x 7 Poco camera; Goerz Dagor lens; 8¼-inch focus; stop, F/8; exposure, 4 seconds: Stanley plate; hydrochinone developer; contact-print on Kruxo.

The pictures of F. J. Mortimer, particularly those made during the period of the present war, are invested with sentiment, and with historical or moral significance. They are also marked by action and movement; but in "Albion—The White Walls of England," page 137, there is impressive tranquillity—the lofty, precipitous cliff, pictorially balanced by the aqueous expanse relieved by the lighthouse, but no sign of human or animal-life. The title, in its dignified simplicity, sets in motion a train of thought associated with the traditional security of "Proud Albion."

As PHOTO-ERA readers are already familiar with the Editor's exalted opinion of Mr. Mortimer's work in pictorial photography, they are invited to read an extract from a letter sent to the Editor by a friend, who is associated with the publication of one of the finest illustrated magazines of this country, and who had an opportunity, recently, to examine a collection of Mr. Mortimer's prints.

"The photographs of Mr. Mortimer which you have been kind enough to send me for my personal examination, were received some days ago. They are very beautiful, indeed, and are wonderful examples of the work of a real artist with the camera. Some of them are so much like good paintings in composition and effect, that it requires an expert to say that they are original photographs."

I have referred frequently to the markedly artistic skill of motion-picture photographers or "cameramen," as displayed on the screen. While the cameraman is at work, another is busy making occasional "still" pictures, which are used for purposes of advertising. He uses an 8 x 10 tripod-equipment. Such a still-picture is shown on page 138. It represents a scene in the admirable photo-play, "Secret Strings," and is remarkable for the artistic arrangement of the players, and the superb setting; also for the excellent technical qualities—lens-work, lighting and perspective. Data, furnished by Mr. Smallwood, chief of the photographic department of the Metro Pictures Corporation, at Los Angeles, U. S. A., are as follows: "Secret Strings"; present scene made in the gardens of Del Mar estate, Long Island, N. Y.; artists represented are Olive Tell, as Janet Newell, and Hugh Thompson, as Hugh Maxwell, and, in background, William T. Kelley, as Arthur Newell, and John Daly Murphy, as de Giles, the millionaire; August, 1918; 2 P.M.; 8 x 10 Eastman camera; 10-inch Goerz Dagor; stop, F/11; 1 second exposure; dryplate; dev., pyro; 8 x 10 contact Artura print.

Mr. Charles H. Bayley, the author of the view of Lake Louise, page 141, is one of the comparatively few altruistic camerists who use their hobby chiefly as a means to give pleasure to others. Mr. Bayley is an ardent admirer of American mountain-scenery, and for the last twenty years he has made annual visits to one or more of our National Parks, but always accompanied by his faithful camera. His pictures reveal rare artistic discrimination and technical knowledge. In entertaining his many friends with the results of his photographic journeys, Mr. Bayley employs the ideal method of presentation—the stereopticon. The slides are colored by professional experts, according to his instructions, and are truthful and effective representations of nature. Data: 4 x 5 Auto Graflex fitted with 8-inch Cooke-Telar lens, F/7.5, giving a focus equivalent to 13½ inches; Eastman roll-film; contact-print.

Our "Domestic Pets" Competition, held several months ago, yielded a large number of subjects thematically attractive and artistically admirable.

(*Continued on page 162*)

XUM

ON THE GROUND-GLASS

WILFRED A. FRENCH

Illegible Handwriting

THE long-suffering Editor found it necessary, recently, to call attention to the careless and illegible way in which correspondents and customers sign their names to communications, and to praise the order issued by U. S. Government officials to obviate this annoying practice. In commenting on this subject, the Editor of *The Amateur Photographer* says: One of these days we shall yield to the temptation to reproduce in *facsimile* some request for information on a photographic subject, sent us by an enquirer who does not exercise the common courtesy—no, that is too strong—who is not thoughtful enough, we prefer to say, to write his communication so that it can be read. Before now, we have had to take advantage of the special skill of one of our printers' "readers," and even then have been obliged to send his translation to the original author for the gaps to be filled up. And the worst offenders, it may be observed, are among those who, from the style of the stationery used, or the nature of the enquiry, are presumably sufficiently well endowed with this world's goods, to have had the advantages of a thorough education.

The Effect of Ultra-Hooverism

JOHN EASTLY, the well-known specialist in microphotography, was luncheoning, as usual, at the "Epicure." The proprietor, an ardent disciple of Hoover, conformed scrupulously to the regulations regarding the conservation of food, and, though his dishes were of good quality, the portions were scandalously small. In order that there might be no exception to the rule, he made the rounds of the tables, ostensibly to greet his customers. Thus, he stopped to exchange greetings with Eastly. Tactfully referring to that gentleman's well-known hobby, he asked: "I hear that you are quite an expert in microphotography. Now, would you mind telling me just what that is?" "Why, no," answered Eastly, lingering over his No. 1 Special: "Microphotography is the art of obtaining microscopic reproductions of large objects by means of the camera." "Thank you," said the Hooverizing expert; "now, could you give me an illustration?" "Of course, I can," answered Eastly promptly, pointing to the two diminutive muffins that formed a part of his order: "look at these!"

Care in Examining Thin-Leaved Albums

I MAY be called stingy, but I no longer lend books. They are either never returned, or returned in an injured condition. And thus, I am afraid, it will be with my photo-albums. I bought these books ready-made, 10 x 12 inches, in good cloth-binding. The leaves are chemically pure, of the buff, matte-surface variety, and suitable to write upon. I value them highly. But they need not be lent in order to be marred.

We had some friends at dinner, recently, and among the post-prandial amusements was the examination of my photo-albums. The one that contains views of the National Parks found particular favor—as I discovered afterwards—for it had been examined with care and deliberation, page after page. The person or persons, who admired this pet album of mine, instead of carefully turning the leaves by the upper right corner, turned them at the lower edge, near the binding, with the left thumb, which, of course, caused them to tear. Thus, every leaf in the album was injured. I have gone to much pains to repair the damage done, by pasting a strip of thin paper, of the same color, on the front and back of each tear.

To prevent a recurrence of this sort of carelessness, I shall place in each album a conspicuous notice like this: "To preserve this book, please turn each leaf carefully by the upper right corner."

Refer This to the "Walrus"

SIR,—In your issue of October 30, "Onlooker" gives four methods to determine the film-side of lantern-plates while in the darkroom.

It seems astonishing to me that when referring to plates that require such delicate and clean handling as do lantern-plates, the writer should advise beginners to breathe on them and grasp them in their wet (and probably greasy) fingers.

A more satisfactory method, in my opinion, for plates or papers is to insert the extreme corner of the plate between the bared teeth, when, upon biting gently, the emulsion side is found to adhere to the teeth.

Yours, etc.,
C. W. L.

[It is possible that the photographer's teeth, as well as his hands, would be wet and greasy: whereas if his breath is of such a nature as to endanger the emulsion, we almost think that it would run fewer risks in his hands than in his mouth.—ED.]

The Amateur Photographer.

Hold Your Liberty Bonds

THE money invested in Liberty Bonds if kept so invested until peace is established will be worth much more then than now.

Every provident man and woman in the United States who holds his or her Liberty Bonds may find the money so invested worth twice as much in purchasing power after the war as now. How sure and safe an investment it is, and how profitable an investment, to keep your money invested in Liberty Bonds until its purchasing power becomes greater than at present. It is a better investment than wildcat stock. It is a better use and a wiser use of your money than speculating with it.

It is a duty to your country and to yourselves and to your children to hold your Liberty Bonds. Buy more!

At the "Movies"

"Why did Maud go out; didn't she like the film?"

"Yes; but a sea-storm is coming on and Maud's an awful poor sailor."

PHOTOGRAPHIC THRIFT

Whoever sends us a letter that we consider of practical photo-saving value, will receive from us a six-month subscription to PHOTO-ERA MAGAZINE.

Practical Saving-Methods

EDITOR OF PHOTO-THRIFT DEPARTMENT:

Correct timing in printing saves paper, the use of the Acetic Acid Stop-Bath, and a considerable amount of developer, by allowing the prints to drip, especially when using 11 x 14 or larger.

Make up the print-hypo, by using but half the usual quantity, of acidifier, don't overwork the bath, save making reprints later, and use the bath for fixing negatives.

By so doing, the pyro stain image is retained, saving prolonged development to gain strength, thereby saving detail in highlights. Again, soaking in fresh print-hypo saves ferricyanide by lessening the stain and contrast when necessary. Of course, more care is necessary in washing, as the film is tender—a decided advantage in subsequent intensification. It saves time and fault-finding.

Save the discarded bath, and later extract the silver, as advocated recently in PHOTO-ERA. Used M. Q. Print developer, with a little pyro-stock added, makes a good developer for copy-negatives.

(While seemingly contrary to good practice, negatives fixed a year ago in used print-hypo exhibit no discernible change in printing-quality.)

P. W. SAUL.

EDITOR PHOTO-ERA MAGAZINE:

The envelopes that contain developing-paper usually have a stamp of the date before which the paper should be used. Usually the paper will be good for a longer time; if the paper is kept in a cool, dry place, it will keep much longer. Should the paper fog, add two or three times the normal amount of potassium bromide and lengthen the exposure. You will be agreeably surprised at the results. By means of test-strips you can easily determine the length of exposure needed for the increased bromide. The procedure is very much the same as if you change from a soft or normal paper to hard. Lengthening the exposure, however, tends to give softness in the picture and the increase of bromide gives a warmer tone. With extreme treatment, a good sepia may be obtained.

I had quite a stock of paper that was considerably past the time-limit, when I went away for a two years' leave. I packed it away in an inside closet where it should keep dry and the temperature would be even. Although water-pipes in the room, above, had been on a rampage, and there were signs of some flooding in the closet, I was able to use the paper.

I began with about four times the normal amount of bromide for the metol-hydrochinone formula. The results were pleasing; but I kept on adding more bromide and lengthening the exposure, getting warmer and warmer prints. Finally, I turned to a package that for years I had neither had the courage to try to print nor to throw into the waste-basket. I poured in a little more bromide and where I would have exposed six to eight seconds on normal paper, I now exposed two minutes. The prints were a rich brown and turned out to be the best in the batch. I bought the paper in Heidelberg, Germany, in 1906, so it was at least twelve years old! Can you beat that for conservation?

C. O. CARLSON.

EDITOR PHOTO-ERA MAGAZINE:

The amateur who uses plates of two sizes has probably wished to cut the larger plates to fit the smaller camera in order to use up his supply of large plates before they became old. To cut plates, get a smooth flat block one-half inch thick and cover with lintless cloth, or paper, nailing a cleat across the cloth so that a plate laid on the cloth and pressed against the cleat will extend over the edge of the block with the place for the cut just at the edge of the block. Buy at any hardware store a small wheel glass-cutter. Cut a guide-block, out of quarter-inch board, of such size that when it is pressed against the cleat, the glass-cutter will run along the opposite edge just where the cut is desired. To use, lay plate with film against the cloth and press against the cleat. Lay the guide-block on the plate and press against the cleat. Make the cut with *one* firm stroke from edge to edge of the plate. Break by laying a third strip of wood on the projecting portion of the plate and pressing gently down, holding the guide-block firmly against the remainder of the plate. Cut film with a knife after the glass is broken. Practice on some old negatives until the operation can be performed easily in complete darkness. It is easy, and success is certain.

CLARENCE A. PIERCE.

EDITOR PHOTO-ERA MAGAZINE:

The use of a reducer to clear overdeveloped negatives is common enough; but I wonder how many amateurs throw a slightly darkened print on bromide or developing-paper into the waste-basket when it might be saved easily by a few moments' work. Although not a remedy for spoilt prints, it often happens that otherwise good prints seem to have a slightly dull-gray appearance—most noticeable in the lighter parts—which may be due to several causes. A lack of enough bromide in the developer; or forcing of development might cause gray tones. In other cases, some part may be a bit too dark, or a light tone needs to be brightened to give accent to the rest. In any case, a very weak solution of the well-known hypo and potassium-ferricyanide reducer will do the work. For this purpose take a solution of plain hypo and water, about one to ten, and when ready to use add a few drops of potassium-ferricyanide solution, which may be kept in the dark as a stock-solution,—one to ten is a convenient strength. The prints need only be rinsed once or twice after taking from the fixing-bath before this clearing-bath is used. For general clearing, immerse prints in the solution; but for local work place on a sheet of glass, blot off surplus water and apply solution with a mop of absorbent-cotton or a camel-hair brush. Afterward, wash as usual.

WILLIAM S. DAVIS.

XUM

ANSWERS TO QUERIES

C. J. K.—**Mildew on a lens,** due to the long storage of the camera in a damp place, may be cleaned off by rubbing the lens-surfaces gently with a tuft of cotton dipped in alcohol or pure water. If this does not remove the mildew, it is then imperative to return the lens to the maker for attention. In no circumstances, attempt to remove the "mold" yourself. If the "mold" is shown to be a deterioration of the glass, it is likely to prove a very expensive matter to make the lens right again.

W. A. Y.—**To copy pen-and-ink sketches** successfully and to obtain the maximum density and clear lines, it is best to use a slow plate—preferably one known as a process-plate. Full exposure and very full development should be given in every case. Should you get full density but the lines appear fogged, the addition of a little potassium bromide to the developer —without altering the exposure—will be of benefit.

A. O. T.—**To block out skies** means to render the sky-portion of a negative perfectly opaque, so that when printed the sky remains white and other parts of the negative print out as desired. It is then possible, by covering up the landscape, to print in a cloud-effect from another negative. To block out the sky requires great care, particularly if the skyline of the landscape is broken. A soft ball-pointed pen and liquid india-ink is best for the purpose, although a sable-brush and opaque water-color paint might do as well. On the film-side of the negative, follow the outline carefully with your pen or brush until a thick line on opaque ink or color is traced. Then, with a larger brush expand the outline into the sky for about a quarter of an inch. The landscape will then be outlined on the skyline with an opaque band. The rest of the blocking out can be done on the glass-side of the negative; either with opaque paint laid on heavily and overlapping the line on the film-side or with a piece of opaque paper cut to shape and pasted on the glass.

C. H. F.—**With regard to home-made panchromatic plates** there is a formula, given by a Professor Namias, which might be of interest in connection with your experiments. The formula is as follows: Ethyl violet, 3 grains; erythrosine, 1½ grains; pure alcohol, 3½ ounces; distilled water, 3½ ounces. For use, take 2 drams of this solution, ½ dram of strong ammonia and 1¼ ounces of distilled water. Plates of medium rapidity are bathed for three minutes, then washed for three minutes and finally dried rapidly in a warm and totally dark room. Plates thus prepared do not keep very long after bathing and should be used with a suitable color-filter and developed in the dark. Any darkroom-light—no matter how "safe" it may be—will ruin the plates at once.

W. M. T.—**Plateholders not in register with the ground-glass** is a frequent cause of blurry negatives. You state that when you "stop down" the picture is reasonably sharp; but when you use a large aperture the picture is "fuzzy," even though it appeared sharp on the ground-glass. Frequently, amateurs fail to see to it that the ground-side of the ground-glass faces the lens. If the shiny side is toward the lens this would account for your trouble at once. Remember that the ground side of the ground-glass and the emulsion-side of the dryplate must come to exactly the same position behind the lens in order to register. Unless both coincide the image will be out of focus. Sometimes, it is the focusing-scale that needs to be examined carefully. However, the register of ground-glass and dryplate in the plateholder is of the greatest importance and should receive the immediate attention of a competent camera-repair man.

F. A. K.—**Traveling Photographers are disappearing** from our cities and rural districts. We would not advise you to begin your photographic career by traveling about photographing residences or such other subjects as you might find. Moreover, we are fairly certain that it would be virtually impossible for you to average twenty-five dollars a week from such work. On the other hand, if you establish yourself in a small community and win work and friends by your personal merit and skill with a camera, we believe that you will do much better in the end. For the work you contemplate to do, we think that the 5 x 7 size is preferable to 4 x 5. Postcards may be made from a 5 x 7 negative as easily as from a 4 x 5 by using the proper masks or by careful spacing.

R. W. T.—**The best photographic school to meet your particular requirements** is the New York Institute of Photography, 141 West 36th Street, New York City. There you may obtain thorough instruction in retouching, developing, operating and motion-picture work. Since you are a disabled and honorably discharged photographer of the U. S. Air Service you will obtain a special rate for any course of study that you decide to take.

T. H.—**The best light to use when developing orthochromatic plates** is one that is positively free of any actinic light. Sometimes a cheap darkroom-lamp will have a red glass in it that is very far from being safe to use with any dryplate. A darkroom-lamp such as is advertised by reliable dealers is usually reasonably safe, although it is well to make careful tests before risking the loss of a valuable negative. The Wratten Safe-Lights are thoroughly dependable and likewise any other darkroom-illumination made scientifically by a well-known photo-dealer or manufacturer. During development it is advisable to refrain as much as possible from too frequent examination of the plate. The modern orthochromatic plate has so much latitude that with reasonable precaution you need fear no trouble.

G. G.—**The selection of a reflecting-camera at the present time** is rather difficult since you say that certain imported models interest you. Conditions are still too chaotic to permit importers to obtain cameras from France and England with any degree of certainty. If you can wait a few months we believe that you will be able to inspect many types of the best imported reflecting-cameras. However, if you need a camera at once it might be advisable to correspond with any of the dealers advertising in PHOTO-ERA who carry foreign equipments. If you desire a new equipment, there is no reflecting-camera that has stood the test any better than the well-known Graflex. In our opinion you can do no better, unless you can wait until later to select an imported equipment.

EVENTS OF THE MONTH

Announcements and Reports of Club and Association Meetings, Exhibitions and Conventions are solicited for publication

British Optical Glass

In view of many misleading statements regarding the actual manufacture and supply in this country of optical glass (of which there are several hundred varieties), it is interesting to note how the subject is handled in England, according to an editorial in *The Amateur Photographer*, of December 25, 1918: "We have heard so much of the dependence of the British lens makers upon Germany for their supplies of optical glass, that it is particularly gratifying to note Mr. Kellaway's recent announcement upon the present position of the industry in this country. The output, he tells us, has increased since the war began to not less than twenty times what it was, and we are now entirely self-supporting; in fact, the manufacture here has developed to such a point that it is in excess of what can be absorbed in time of peace, even under the most favorable conditions. As in pre-war days, British-made optical glass supplied only about ten per cent of the country's requirements, sixty per cent coming from Germany and Austria, and thirty per cent from France; it will be seen how great has been the increase in the home production. We are glad to learn on very high authority also that the optical glass now being produced in Britain compares most favorably in quality with that heretofore imported; a remark which applies in particular to the heavy barium glasses, which are the most difficult of all to manufacture, and for which we formerly relied entirely upon outside sources."

German Bombs Fall Near British Journal

Editorially *The British Journal of Photography* has this to say about a narrow escape from serious damage to its offices in one of the many German air-raids over England: "With the publication of the official report on the air-raids on London, it is now permissible for us to refer to the incident of October 13, 1915, when two bombs from an enemy-airship fell, one immediately to the rear of the 'British Journal' offices and the other in the middle of the street nearly opposite the front of the building. The force of the explosion shattered and blew in all the windows and did some other minor damage, but fortunately no life was lost. It was late in the evening, the edition for the week had—in newspaper-language— 'been put to bed' (forms closed), the staff had gone home, and the caretaker and his wife, who, by a piece of luck, were in the rear part of the building, suffered only the mental shock of the two successive explosions from the effects of which they have not completely recovered even now. In a later air-plane night-raid, in which part of Covent Garden Market suffered, some slight damage was again done to our offices. The souvenirs, in the form of twisted metal and splintered wood, which have been preserved from these assaults, are not necessary to keep in our minds the sense of loathing for the nation by whom these acts of murder were planned. We do not disguise from ourselves that they were kindness in comparison with scores of others committed according to plan during the war." We are glad, indeed, that our British cotemporary suffered no greater damage during those stirring days.

W. H. Rabe

It is with deep regret that we record the death of W. H. Rabe of San Francisco, Cal., on January 3, 1919. For thirty-five years Mr. Rabe has been an enthusiastic photographer and for many years a member of the California Camera Club. During the last five years, he has won recognition from Salons and photographic exhibitions for his beautiful pictorial work. In the pages of Photo-Era for the past few years may be found many striking examples of Mr. Rabe's architectural studies of the San Francisco (Panama-Pacific) Exposition in 1915.

W. H. RABE

Newark Camera Club, Inc.

We are informed by Mr. Louis F. Bucher, secretary of the Newark Camera Club, Inc., that his club is to offer a sterling-silver medallion and a bronze medallion to the two camera-clubs submitting the best sets of slides to his club. Further particulars may be had from the secretary, 878 Broad St., Newark, N. J., who will be pleased to answer all correspondence.

Students Returning to Bissell Colleges

ALTHOUGH the war depleted the ranks of students of the Bissell Colleges, Effingham, Ill., President Bissell informs us that many of the old students are returning to complete their courses of study. The present rapid rate of demobilization has enabled several soldiers to resume their study of photography. Among these are Lieut. I. Snodgrass, Oscar Brindley of Coleman, Alberta, Canada, D. T. Hyde of Greenville, Sask., Canada, and Thomas F. Dillon of Philadelphia. Harry Burke, of Chicago, is one of the new students and has been identified with Burke & James, Inc., Chicago. Even China is represented by Lin Wa Sun, of Hong Kong. There is every indication, based on enrollments, that 1919 will be one of the best years in the history of the colleges.

War-Memorials

IN a recent issue of *The Amateur Photographer* appears an editorial with regard to war-memorials that goes on to say that it is only too evident that, taken in the mass, the British nation is not artistic. That it has produced great artists no one would deny; but there exists throughout the mass of the people no such feeling for art as characterizes the French, for instance, or, still more, the Japanese. Art plays little or no part in the national life, and there is nothing approaching a general recognition of its value. It has been suggested that there might be worse ways to commemorate the great war than by the demolition of some notorious public-monuments; but what will be done, it is to be feared, will be to erect still more, and possibly still worse, memorials in the cities and towns of the kingdom. Whether we shall ever awake to the importance of art in the scheme of life is doubtful. There are few signs of it. There is no authoritative body or institution in the country to which to look for guidance. The Royal Academy is regarded by some as taking that position; but its members and its governing body seem to consider it as a private concern, existing to study the interests of the individuals of which it is composed; in fact, a co-operative association designed primarily for the sale of its members' paintings.

Our Illustrations

(*Continued from page 157*)

For proof, the reader is respectfully referred to the prize-pictures published in the February issue. A few of the Honorable Mentions will be shown occasionally in PHOTO-ERA, beginning with the current issue. A young girl fondling a pet donkey is the subject of a successful composition by J. H. Saunders, of England, reproduced on page 142. One admires the soft lighting, the tonal values and the contrast in expression. The rules of art have been well observed, for there is no lack of unity and harmony. No data.

Advanced Workers' Competition

AMONG the consistent participants in these competitions is George W. French. His progress and success have been fluctuating. His first recognition was an Honorable Mention in the Beginners' Competition, March, 1917, followed immediately by the third prize, four Honorable Mentions and the first prize (November, 1917). Eliminated thus from the Beginners' Competitions, Mr. French entered the Advanced Workers' class, winning successively four Honorable Mentions, the third prize in "Rainy-Day Pictures," and by a *tour de force*, the highest award, page 145. Mr. French —who, by the way, is no relation of the Editor—is an assiduous worker and student, and very happy in his figure-compositions. While his efforts in this popular form of pictorial activity show a spontaneity of design they do not suggest the existence of a forceful originality. It was, therefore, as a pleasant surprise, that his "Bending to the Task" met the gaze of the jury, who regarded it as one of the best genres sent to this class of competitions for many years. The picture is an inspiration in motive, design and execution. In action, chiaroscuro and treatment—and I do not hesitate to say it—Mr. French's picture suggests the work of Jean François Millet! Having suddenly come into prominence, Mr. French will no doubt see to it that his entries in picture competitions will be characterized by equal pictorial merit. Data: August, 1 P.M.; strong light; camera, Ansco 3; size, 2¼ x 3¼; lens, Ansco Anastigmat; 4-inch focus; stop, 4/6.3; exposure, 7 seconds and flashlight; Eastman film; pyro developer; enlarged on Royal bromide.

In Mrs. Charles S. Hayden's attractive and well-ordered composition, page 147, one is glad to note the absence of objectionable shortcomings common in interiors of this kind, viz. halation, promiscuous highlights, linear distortion and underexposure. But Mrs. Hayden is a careful and experienced worker, and the present picture is a credit to her skill. Data: August, noon; bright day; 6½ x 8½ camera; Wollensak portrait-lens; stop, wide open; exposure, about 2 seconds; contact-print on Willis and Clements Y Y Sepia.

Man's work is woman's work, or, the husband in the war, the wife to the rescue, and thus we have the solution of a domestic problem pictured for us, page 148, by an observant camerist—woman again. It has been cold this winter, away up in Canada, and the home-fires had to be kept burning. The stress of circumstances is well expressed by the hastily dressed worker. The action is real—no need to pose. The entire scene forms a capital pictorial theme, and incidentally is in strong contrast to Mrs. Hayden's cheerful living-room, on the preceding page. Data: December, 10 P.M.; flashlight; camera, 5 x 7 Seneca; lens, Zeiss Ic Tessar; 7⅛-inch focus; stop, F/4.5; exposure, 3 seconds and flashlight; plate, Royal Extra Fast; developer, Monomet and Hydrochinone; contact-print on Studio Cyko; same developer.

Our Contributing Critics

THE picture offered this month to our contributing critics for consideration is "Polly, Do You Love Me?" by Ethel Dismukes. To assist at a better understanding of the composition, the following data are supplied: November, 1 P.M.; diffuse light; 5 x 7 R. O. C. view-camera; Bausch and Lomb lens; 9-inch focus; stop, wide open; exposure, 1½ second; plate Seed 30; developed in tank; print on Azo F Hard.

A Doubtful Compliment

MISS PASSAY—"What do you think of my latest photograph?"

MISS YOUNG—"Splendid! Isn't it wonderful what they can do!"

LONDON LETTER

CARINE AND WILL CADBY

THERE is a strong reaction all around in favor of color. We have had over four years of black and Khaki and, at last, there is a perfect revulsion of feeling against somberness and a craving for really vivid colors. This general attitude of mind is reacting on photography, and many photographers are tempted to forsake their old black-and-white work and try their skill with colors.

A short time ago, Miss Agnes Warburg showed us some examples of her Bromoil-Transfer-Collotype which she calls, "War-Type." According to her, this process is simplicity itself. She gave a description of it in *The British Journal of Photography*, a month or two ago; but to us it seemed alarmingly intricate and its chances of success depended on the photographer not only being a most precise and accurate worker, but a very industrious one as well. No doubt our opinion was influenced by the fact that only the quick and the slap-dash can appeal to busy people. Now, with peaceful days in sight, one expects to have more leisure for the gentle art of photography, and Miss Warburg's examples certainly suggest that it is worth while to give a little thought and time to the process.

We were at a very interesting photographic entertainment last week. A neighbor of ours, who has been very successful with autochrome-work, gave an exhibition on the screen of some of his best slides. We had already seen some of the original plates and had been astonished at the amount of color he had been able to get out of English landscapes and figures. But to see autochromes to real advantage, they should be shown on a screen, and we were able to enjoy these a good deal more in their enlarged form. They were mostly autumn-subjects, with deep, rich reds and vivid, translucent yellows. One saw in them how much the management of sunshine and lighting altogether had to say in the matter of making them a success. Our neighbor had used sunshine cleverly and with restraint. One of his most successful subjects was a portrait of a fair girl with bent head leaning against a door. A ray of sun had caught the curve of the coil of her hair and turned it into burnished gold. It was much more emphatic than a more liberal use of sunshine would have been.

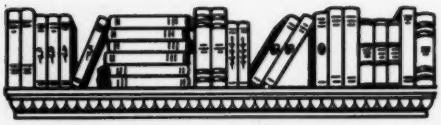
As we came away, it seemed that there was something missing. We realized that the war had stopped, and what we missed was "a silver collection for the Red Cross"!

Greatly daring, we venture to point out a slight inaccuracy in the December issue of PHOTO-ERA which might lead to misunderstandings with future exhibitors from across the water, who are thinking of sending to the London Salon. A. H. B., in his interesting and stimulating article in the department "With The Trade," discussing the admiration of the English for the American exhibits at last year's London Salon, goes on to say:—"Why should not manufacturers be proud of the fact that the *first prize* picture in a world-famous photographic salon was made on their film, plate, paper, or developed with their developer?" Now, if in this remark A. H. B. had the London Salon in mind, it is important to observe that this institution has always abstained from the practice of giving any sort of prizes or medals of recognition. The idea has been that the simple fact of a picture being accepted and hung was recognition and honor enough. And it is just in this particular point that the London Salon differs from the "Royal" and other big shows. Certainly, there have grown up with long use of the same gallery specially favored positions on particular walls, where pictures of especial merit may find a place. The forerunner of the present Salon, the Linked Ring, once issued a commemorative plaque executed by Mr. Emanuel. This was at its tenth annual exhibition, in 1909, and a copy was presented to each exhibitor. It is a fine oblong design in bronze of Elizabethan sailing-ships, ten of which may be discovered as representing the number of annual shows held. This plaque, which is now quite rare, is much prized, because it is the only instance in the long life of the Salon when any kind of commemorative issue was made.

There can be little doubt that the most "bephotographed" person, in all time and up to the present, is President Wilson. On his recent visit to London, cameras of all sorts, from the vest-pocket to the kinema-apparatus, were in evidence everywhere on his route, literally in thousands. And on this auspicious occasion all the work did not fall on English photographers, for the President's countrymen were in evidence, everywhere. As one reporter voiced it: "Downing Street was made notable by America, America with the camera, all sorts of cameras, and a determined passion to get the best possible focus of anything that came along." But quite apart from the official photographs of the procession, there should be many and interesting records of much, taken by the man in the crowd, both American and English, of real historical value. During the procession, the big pediment near Pall Mall East had (quite correctly) a statue-group of photographers on it, for it was near the home of pictorial photography, while in the porch of the National Gallery undauntable American kinematographers had set up their instruments. Through all the streets of the route there was the same story. People, not by the many but by the multitude, formed an army of occupation along the processional way, and an appreciable proportion of them were busy with cameras. No doubt that in after years their photographic efforts on this important occasion will become immensely valuable.

We have received an intimation from the War Office to the effect that from the 6th of January it will no longer be necessary to submit articles for America to the Censor; but, as another paragraph states that "Holders of permits marked 'D' (followed by a serial number) are advised in their own interests to continue their present practice of sending matter for publication abroad to the Chief Postal Censor," we must continue to submit these letters to the authorities at Strand House, as ours is a "D" permit. And so, gradually, very gradually, will Photography cast itself free from war-time restrictions, and we shall, presumably and at some dim future date, be able to communicate without let or hindrance with our American friends. [It is interesting to record that during all the time, January, 1912 to February, 1919—including the war—that our genial and faithful correspondents have sent us a monthly letter, the censor has not obliterated as much as one single word,—EDITOR.]

XUM



BOOK-REVIEWS

Books reviewed in this magazine, or any others our readers may desire, will be furnished by us at the lowest market-prices. Send for our list of approved books.

PUPPIES AND KITTENS. By Carine Cadby. Illustrated with 39 photographs by Will Cadby. 112 pages. Price, cloth 2/6 net; in the United States, $1.50, postpaid. London: Mills & Boon, Ltd. Copies may be procured through PHOTO-ERA at $1.50 each postpaid, in the United States and Canada.

If there is a book which, by word and picture, can captivate a child to the exclusion of all else, and exert a similar effect upon an adult, by virtue of the combined genius of two eminently gifted persons, such a one is "Puppies and Kittens," by the Cadbys. The little book is a series of illustrated animal-chats—spontaneous, artless and logical, that make an instantaneous appeal to the child's imagination, and hold its attention till the last word is told, with a longing for more. These quaint, little episodes are instructive, too, but without an obvious effort. The pictures are marvels of spontaneously happy interpretations of the text. The various groupings are masterpieces of composition—so felicitous, ingenuous and irresistibly expressive. They reveal convincingly the exercise of uncommon skill, ingenuity and patience. In their typically amusing attitudes, the little creatures appear to be endowed with almost human intelligence. Indeed, it seems as if Mr. Cadby were right in his element, although he has achieved distinction in bigger things.

The book consists of four chapters devoted, separately, to puppies, kittens, chickens and spiders' webs, the illustrations of the last being of exceptional beauty. A copy of this delightful little volume should be in every home where there is a child. It will prove its value a hundred times in joy and happiness.

The Critic

He looked at the "lines"
and the "masses";
I saw the brook
and the grasses.
He saw the picture;
I saw the place.
He saw the "balance";
I felt the grace.
Into the vastness
I drifted;
I sensed the cool
of the glade
Canopied rich
with verdure—
Pictured myself
in the shade.

Who got the *joy* of the image,
He that saw "nuance" and "tone,"
Or I, that sat in the quiet,
Who had made the picture *my own?*

—*Milton McKee Bitter.*

FROM "PUPPIES AND KITTENS" BY THE CADBYS

Copy, Duplicate, Replica

A *copy* is as nearly like the original as the copyist has power to make it; a *duplicate* is exactly like the original; a carbon *copy* of a typewritten document must be a *duplicate;* we may have an inaccurate *copy*, but never an inaccurate *duplicate*. A *facsimile* is like the original in appearance; a *duplicate* is the same as the original in substance and effect; a *facsimile* of the Declaration of Independence is not a *duplicate*. A *facsimile* of a key might be quite useless; a *duplicate* will open the lock. An *imitation* is always thought of as inferior to the original; as, an *imitation* of Milton. A *replica* is a *copy* of a work of art by the maker of the original. A *duplicate* is really an original, containing the same provisions and signed by the same persons, so that it may have in all respects the same force and effect. A *copy* is a *reproduction* of an original, or even of a reproduction of an original, but not necessarily of the same size, nor retaining all the good or bad qualities of the object copied. Thus, there are good, bad and indifferent *copies* of the Venus de Milo, in bronze, marble and alabaster, the original being of marble. There are also *copies* of photographs, ranging in quality according to the skill of the copyist, and may be printed in any size or in any medium. A *reproduction* is the same as a *copy*, and may be executed in the form of a photograph, photogravure or halftone.

"Is the old camera-club they used to have in this town, defunct?"

"Laws, no, sir; it's been dead these ten years."

RECENT PHOTO-PATENTS

Reported by NORMAN T. WHITAKER

THE following patents are reported expressly for PHOTO-ERA MAGAZINE from the patent-law offices of Norman T. Whitaker, Whitaker Building, Washington, D. C., from whom copies of any one of the patents may be obtained by sending fifteen cents in stamps.

A New Method of Ascertaining the Combination of Stops for the Production of Halftone-Dot Negatives with a Process-Camera has been patented by Fletcher Douthitt, of Detroit, Mich.; patent, number 1,289,129.

Patent, number 1,289,256, Means to Prevent Double-Exposures, has been granted to Richard C. Peterson, Malden, Wash.

Alfred Andrews, of Barnesville, O., has been granted patent, number 1,289,357, A Multiple-Exposure Attachment for Cameras.

Patent, number 1,289,088, A Finder has been invented by Joseph Becker, of Washington, D. C., assignor to Eastman Kodak Company of Rochester, N. Y.

A Spotting-Mount for Camera-Dissolve Apparatus has been invented by Ethan Allen Fritz, of San Francisco. Patent, number 1,288,555.

Patent, number 1,288,753, Photographic Printing-Process, patent issued to John Edward Thornton, West Hampstead, London, England, assignor to John Owden O'Brien, Manchester, England.

John V. McAdam, Hastings-upon-Hudson, and Charles J. Everett, New York, N. Y., have invented a Photographic Printing-Machine, patent, number 1,288,077, assignors to Revolute Machine Company, New York, N. Y., a corporation of New York.

Patent, number 1,288,078, Film-Shifter for Cameras, has been granted to Charles H. McClain and Daniel L. Buren, of Bremerton, Wash.

Carl W. Schmidt, of Piedmont, California, has invented an Autographic Attachment for Cameras. Patent, number 1,288,221, assignor to Ansco Company, Binghamton, N. Y.

Patent, number 1,288,403, has been issued to William F. Garland, New York, N. Y., on a Photographic Developing-Apparatus.

Irvin M. Kelly, of Laconia, N. H., has received patent, number 1,286,341, for Photographic Film.

Patent, number 1,286,708, on a Camera, has been granted to Alexander C. Milbrath, of Milwaukee, Wis.

Adolph Stuber, of Rochester, N. Y., has invented a Camera, patent, number 1,286,892, assignor to Eastman Kodak Company of Rochester, New York.

A Toning-Process and Product. Patent, number 1,286,890, invented by Edmund R. Bullock, of Rochester, N. Y., assignor to Eastman Kodak Company.

Obtaining the Best from Underexposure

WE are inclined to think that many photographers, when developing plates that are known to have been badly underexposed through circumstances over which they had no control, give too little time to the operation. Of course, if the negatives are required for press-work the method which we describe below is not practicable on account of the long time taken. But in other circumstances, when a few hours do not greatly matter, we can recommend a trial of it. We do not claim that the procedure is a new one; but as the result of our own experience it is of very considerable value, and either entirely unknown or overlooked by most photographers. Recently, we exposed two plates of the non-screen ortho variety upon the same subject at exactly the same time, giving both the same exposure, which by a meter was only about a fifth what it should have been to obtain the minimum correct exposure. These two plates were developed side by side in the same dish, using the time-method, and the ordinary pyro-soda formula. When development had apparently come to a standstill, one plate was taken out and fixed, and the other was left in the solution after dilution with about six times its own bulk of water. The dish was covered with a sheet of card and put aside for about an hour and a half. The negative was then placed in a dish of plain water covered as before, and left until the next morning, when it was fixed and washed. Those two negatives, when examined side by side, amply justified the procedure. The first plate was weak, lacking in both tonal quality and shadow-detail; the second, though slightly pyro-stained, was of good printing-quality, nor was there any tendency towards "grain," which would certainly have been the case if development had been unduly forced.

The British Journal.

An Eight-Day Exposure

THE authorities at Bristol seem rather chary to give way to the photographer overmuch. Thus, in a building which serves as the private chapel of the Mayor and Corporation, permission to photograph was forthcoming; but it was forbidden to use flashlight or any artificial illuminant. Thereupon Mr. Horton obtained a mandate that the chapel should be undisturbed during the time required for the exposure; and setting his camera up at eight o'clock on a Monday morning he completed the exposure on the evening of the following Monday, thus the lens was open at its fullest aperture for eight days. The result on an orthochromatic plate was excellent in detail, but rather more suggestive of a rich and warm effect than the actual interior warrants.—*The Amateur Photographer.*

In a Darkroom

O CREAMY plate fast darkening in the tray,
Thou holdst the sunlight of a sunny day,
Thy color deepens where her dress was white,
Thy image sobers while her own grows bright.

Now where her smile was, can I catch a trace,
And shadows gather till they form her face;
Her wealth of hair but faint appears—
Is white, in prophecy of honored years.

O happy grain that tak'st thy seed from light,
Bring forth thy fruit to yearning love's keen sight,
And thou shalt be a mother proud to see
The host of beauties I shall print from thee.

THOMAS F. LYNCH.

XUM

WITH THE TRADE

The German Boycott of Enemy-Goods

In one of the recent issues of the *Photographische Rundschau*, received through the courtesy of one of our subscribers in Sweden, we found an insert printed on pink paper that proved to be a bargain-list issued by the largest photo-supply house in Berlin. Among several hundred cameras, lenses and accessories listed there was one item of one hundred *Kodak Albums* and another of two hundred *Ensignette roll-films*. It is apparent that, despite the attempted Kodak boycott launched in October, 1917, and described fully in June, 1918, Photo-Era, German photographic supply-houses are willing to sell openly "the products of an enemy-industry." Of particular interest is the fact that the two items mentioned were the *only* ones to be set in bold-face type with a heavy black rule around each to help catch the eye.

High Prices

There is no question that prices in general are high in the photographic industry. There is a certain amount of constructive criticism but more destructive criticism by dealers who seem to be of the opinion that prices should drop at once. Apparently, these dealers fail to realize that a higher wage-scale, taxation, lack of transportation, absence of skilled workmen who are still overseas, increased cost of raw materials and other contributing factors have caused high prices and will continue to cause them for many months to come. Virtually, the only solution for the photographic dealer is to be frank with his customers and to make it clear to them that the prevailing high prices are just as difficult for him to pay. Moreover, he should emphasize the point that he will pass on to his patrons any reduction in prices that may occur later on. It is far better for every dealer to take his patrons into his confidence than to remain silent and thus allow a feeling of distrust to obtain.

A. E. Dobbs' Studio

A. E. Dobbs, proprietor of the studio advertised for sale in February Photo-Era, desires to make it clear that his operating-room is 40 x 25 feet, whereas the entire studio is 40 x 50.

Hypo has a Centenary

Many dealers may not be aware that the year 1919 marks an interesting centenary in the history of photography. According to authoritative reports, Sir John Herschel in 1819 discovered the reaction that sodium hyposulphite has upon silver-salts and made public this discovery in the pages of the *Edinburgh Philosophical Journal*. Some twenty years later he announced his method to use sodium hyposulphite as a fixing-agent. Although Wedgwood and others experimented with hypo before 1819, the fact seems to remain that in this year its vitally important place in photography was first made known commercially.

A Tip for the Makers of Sheet Mucilage

A correspondent asks us why the makers of Sheet Mucilage do not state in their advertisements the many novel uses of their "mighty handy" product? For instance, he states that his wife temporarily and neatly, and in a few seconds, mended a tear in her dress! Wonderful, isn't it? "I had a number of good envelopes—I decline to say who made them—without any glue on the flap. I just took a strip of Sheet Mucilage, moistened it on both sides with my tongue, laid it on the back of each envelope and pressed the flap over it—two seconds, and the job was done! No more, for now." And in this way the correspondent closed his letter to the Publisher.

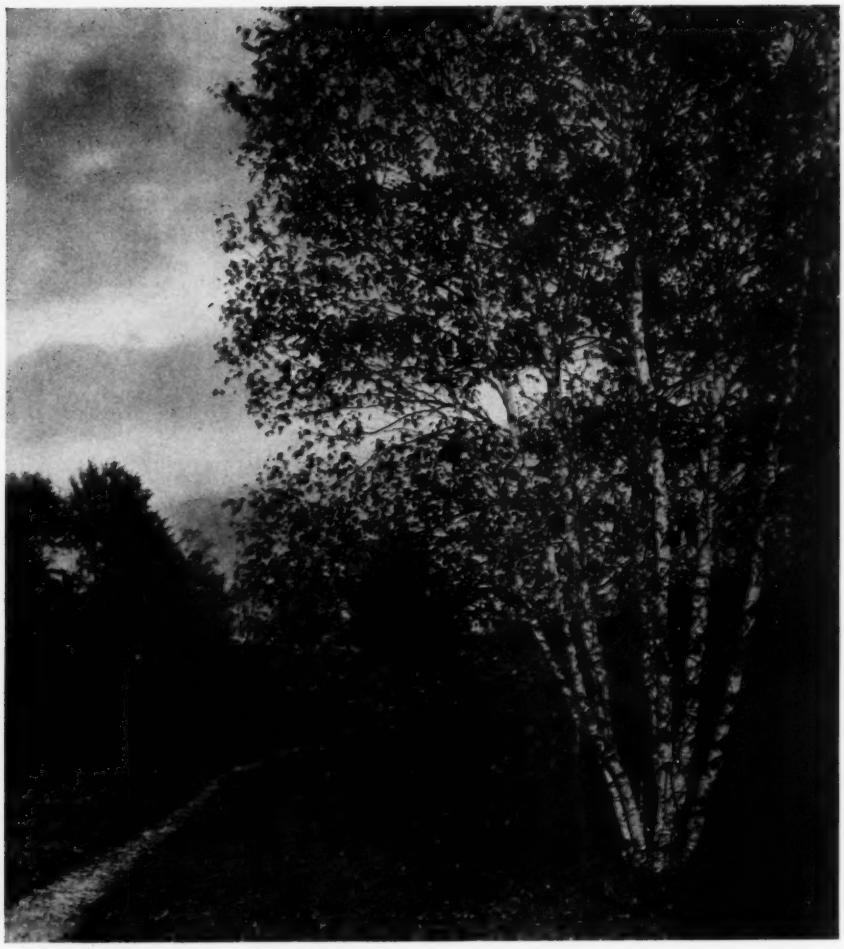
Advertising Second-hand Cameras

Those who have at any time had occasion to study the second-hand market must have found that many advertisers, both dealers and private individuals, frequently leave much to be desired in describing the goods that are for disposal. Take the case of apparatus with which the general photographer is not very familiar or that of an older model not to be found listed in any of the catalogs issued within the last ten years. We saw advertised recently, "A fine 3¼ x 5½ camera by —— (naming a maker of a score of years ago), with two plateholders, no lens." This kind of advertisement, it must be admitted, gives little or no information as to the instrument for disposal, whether it is of single, double, or triple extension, whether it has a reversible back, or a rising-front or swing-back—details that any practical worker purchasing a camera requires to have for his consideration. An older photographer might know that particular model even from the inadequate description given, but a modern worker certainly would not—unless he happened to have catalogs on hand of a score of years back. We have even seen lenses listed by first-class firms with a reputation for second-hand goods from which the aperture, focal length, and other important details were omitted. Advertisers of second-hand photographic apparatus will do well to put themselves in the position of the buyer when describing their goods, giving just those details that they themselves would wish to have; a few words should not be omitted if their inclusion would give completeness to the description. It may be that an advertisement giving full information will be seen by a buyer on the look-out for the particular model of the apparatus described; whereas he would not take the trouble to write to the advertiser, if the goods were not fully described.—*The British Journal.*

They Cannot Advertise in Photo-Era

Amateur Photographer (in the grocery-business): "This package of hypo is one pound short."

Photo-Dealer: "Is that so? You see, I mislaid my five-pound weight and weighed your hypo by the five-pound chicken you sent me yesterday."



THE BIRCH-TRAIL
FREDERICK B. HODGES